PUBLIC PERCEPTION SURVEY

CAREER OPPORTUNITIES IN THE MARINE INDUSTRY IN NEWFOUNDLAND AND LABRADOR

Submitted to:

MARINE CAREERS SECRETARIAT

Submitted by:

P. J. GARDINER INSTITUTE FOR ENTERPRISE AND ENTREPRENEURSHIP
FACULTY OF BUSINESS ADMINISTRATION
MEMORIAL UNIVERSITY

December 2004

Memorial
University of Newfoundland

P. J. Gardiner Institute

INTRODUCTION

Purpose and Objectives

The Marine Careers Secretariat (MCS) was established to promote marine transportation and offshore career and training opportunities, profile the importance of the marine transportation and offshore petroleum industries to the local economy, and contribute to addressing the human resource needs of these industries. The MCS commissioned the P. J. Gardiner Institute for Enterprise and Entrepreneurship (PJG) to undertake a survey, supplemented by secondary research, to ascertain the extent of marine career opportunities in the marine industry and to identify major barriers to accessing these opportunities. Specifically, the PJG was engaged to develop and administer marine public perception surveys and provide an analysis of the survey findings. The project included literature and research design, questionnaire design, sample identification, survey administration and delivery, and data analysis and recommendations. By surveying selected high school students, parents, and influencers (teachers, guidance counsellors, administrators) from geographically representative populations of the province, perception and awareness of opportunities in the marine industry was investigated and ascertained.

Research Support

Mr. John Connors, Chair of the Marine Careers Secretariat, took responsibility for requesting research approval of each of the school boards.

Acknowledgements

We would like to acknowledge the Local Labour Market Partnerships Program of Human Resources and Skills Development Canada (HRSDC), the Canada-Newfoundland and Labrador Labour Market Development Agreement and the Marine Institute of Memorial University for supporting the Marine Careers Secretariat and its project.

We also wish to acknowledge the Directors of Education of the district school boards in the province of Newfoundland and Labrador, for approval to carry out research in their respective regions. Gratitude is also extended to Mr. John Connors and Ms. Cherry Dalley, for allowing us to administer our pilot surveys during their class time. Additionally, we would like to recognize the contribution of information by the Women's Policy Office, through Ms. Jean Bishop.

METHODOLOGY

The research process for this report included both primary and secondary research. Secondary research involved a literature review of materials previously published on the subject.

Primary research was used heavily in this study because there is a limited amount of published information on the subject undertaken. The method of primary research collection was a survey and the instruments were devised by PJG and approved by members of the Marine Careers Secretariat. PJG designed, revised and finalized the four surveys, with review and approval by the Marine Careers Secretariat. Both quantitative and qualitative data were collected. Quantitative data were entered into and analyzed with SPSS statistics software; a summary of the qualitative responses can be found in Appendix II.

Participant Selection

PJG defined the survey population in four categories: high school students, parents, student influencers (teachers, guidance counsellors, administrators) and first year post-secondary institution students. A list of high schools in the province of Newfoundland and Labrador was compiled by PJG and, with the approval of Marine Careers Secretariat, 18 high schools were chosen to participate in the project. The sample schools were identified by members of the Marine Careers Secretariat to ensure representation of all geographical regions in the province.

A representative of each of the selected high schools was responsible for choosing the students, parents, and influencers surveyed. Representatives were advised to randomly select candidates for the survey process but the selection process was ultimately at the discretion of the school representatives.

Surveys were also administered to first year post-secondary students attending classes at Memorial University and the Marine Institute. 'First year' students are defined as those students who have not earned enough credit hours in their studies to achieve the designation of second year or beyond.

Survey Instrument Development and Participant Solicitation

The Marine Careers Secretariat identified potential barriers to interest in, and entry to, a career in the marine sector. PJG devised the surveys to investigate perceptions of the marine industry. The surveys were divided into seven major sections: participant's background; general perception of the marine industry; gender issues; marine careers; education and training; financial incentives; and local marine training. The survey drafts were revised and reviewed by both PJG and the Marine Career Secretariat before finalized versions were sent to the schools.

Upon receiving approval from school boards, PJG contacted the selected high schools individually to determine their interest in the project and their availability to participate. The

schools were informed of the objectives of the surveys and the anticipated benefits of the results. They were also advised that participation was voluntary and that access to school information would not be required.

A class of students from each of levels I, II, and III at each high school was chosen to respond to the surveys. The school representative was also responsible for soliciting input from teachers and guidance counsellors. While the student and influencer surveys were administered in school, the parent surveys were randomly distributed to students to bring home.

The PJG representative approached two first year Memorial University and two first year Marine Institute classes to obtain survey responses from a sample of first year post secondary students. Most students who participated in the survey process met the definition of 'first year post secondary student'.

Confidentiality and Ownership of Data

All parties participating in the research are bound by confidentiality guidelines. The interviewers and other PJG staff are bound by confidentiality agreements. The interviews, interview data, and any other related data have been stored in a secure location. The Marine Careers Secretariat has ownership of the data obtained for the Public Perception Survey.

MARINE CAREERS PUBLIC PERCEPTION SURVEY

KEY FINDINGS

Background Information

The surveys conducted for this study indicate that most high school students intend to continue their education through a post-secondary institution after completion of high school. The top institutions they planned or considered attending upon graduating from high school were Memorial University of Newfoundland and Labrador, the Marine Institute, College of the North Atlantic and other universities. The primary reason for some students not planning to continue their education was they were undecided as to their career option.

Most post-secondary students indicated they were undecided as to a career choice. Those students who were decided as to a career choice indicated a variety of areas such as nautical science, education, nursing, kinesiology and food science.

Factors that resonated with high school students, influencers and post-secondary students in what they consider positive factors in choosing a career were wages, job stability, and benefits. (This question was not posed to parents).

High school students, parents and post-secondary students all agreed that it is the parents, followed by friends, that have the greatest impact on influencing whether students pursue a post-secondary education and/or career. Influencers believed they had a moderate amount of influence on their students.

Marine Industry

General

In terms of familiarity with certain marine careers, high school students, influencers and parents were most familiar with positions in catering (cook/steward). High school students and influencers were also aware of administration positions. Parents and post-secondary students also indicated they were most familiar with engineering officer positions and deck hand/engineering assistant positions.

In terms of whether the survey groups were employed or knew of someone who has been employed or connected with the marine industry, many of the parents, and most of the influencers and post-secondary students, indicated that they or someone they know has been employed or connected with the marine industry. However, less than half of high school students indicated that they, or someone they know, has been employed or connected with the marine industry.

Based on their knowledge of, and experience with, the marine industry, high school students primarily were unsure as to choosing a marine career whereas parents and influencers were

more likely to recommend a career in the marine industry to their children/students. Likewise, post-secondary students were more likely to choose a career in the marine industry.

There was more interest amongst post-secondary students to pursue a marine career than high school students. In fact, there was a low percentage of high school students interested in pursuing a career in the marine industry. The main reasons cited by high school students for not pursuing a marine career were personal interest, having to work at sea/on water, and knowledge of marine careers.

On the other hand, post-secondary students felt that the availability of jobs, working at sea/on water, and salary expectations were reasons for their interest in pursuing a marine career. Those post-secondary students who were not interested in pursuing a marine career indicated their reasons as: their career has already been decided; and, personal interest. Parents and influencers agreed that personal interest, availability of jobs, and salary expectations were important criteria in making a career choice. It is interesting to note that most influencers recommend marine careers to their students. The main circumstance identified preventing an influencer from recommending marine careers to students was lack of information. Many influencers revealed they *do not* have adequate access to marine career information.

Perceptions

According to all survey groups, the three common considerations regarding positive perceptions of the marine industry were "high salaries and benefits"; "good opportunities for promotion"; and "variety and excitement." All groups, with the exception of high school students, also agreed that: "marine careers offer full-time year-round work"; "marine careers require overtime work"; "marine careers are physically demanding"; and, "there are opportunities for professional certification" are positive perceptions of the marine industry.

The main statement that parents, influencers and post-secondary students disagreed with was that "little education and training is needed" in the marine industry.

Gender Issues

There was a perception amongst all groups that women are capable of performing the same tasks and activities as men in marine careers. The evaluation of gender factors with respect to the marine industry indicated disagreement with the statements suggesting that women do not have the same opportunities and capabilities as men.

A notable factor relating to the perception of gender equality in marine careers agreed upon by all four groups is that "women can work anywhere in the marine industry". Furthermore, high school students and parents agreed that "there are equal opportunities for men and women in the marine industry."

Marine Careers

Knowledge of both shore-based careers and at-sea/on water marine careers was somewhat low by all groups surveyed. It is evident that there is a need to promote career options in the marine industry.

Educational and Training Requirements

All groups surveyed agreed that teamwork was the primary educational and training requirement needed for working in the marine industry. With the exception of high school students, communication was another key requirement. High school students felt that navigational skills were important.

Most respondents indicated that the minimum level of education required to enter into a marine career is graduation from high school and the best place to receive skills required for a marine career was the Marine Institute. All four groups felt that it is *not* necessary to leave the province in order to obtain training for a marine career.

Financial Incentives/ Inducements

Influencers, parents and post-secondary students all felt that salaries are higher in the marine sector compared to the average salary of Newfoundlanders and Labradorians employed in other sectors. On the other hand, high school students didn't know or were unsure about the salary comparison.

Knowledge of Marine Institute

Influencers, parents and post-secondary students were aware of some of the programs at the Marine Institute, particularly the diploma of technology and the short-term certificates. Most high school students were unaware of the programs available at the Marine Institute.

Memorial University of Newfoundland was perceived as the most reputable institution amongst the four groups followed by the Marine Institute. Overall, the perception of the Marine Institute was positive; however, it appears that the surveyed groups are uninformed about its programs and the opportunities available in the industry.

PERCEPTIONS OF CAREER OPPORTUNITIES IN THE MARINE INDUSTRY IN NEWFOUNDLAND AND LABRADOR

HIGH SCHOOL STUDENTS

Final Report

Submitted to:

MARINE CAREERS SECRETARIAT

Submitted by:

P. J. GARDINER INSTITUTE FOR ENTERPRISE AND ENTREPRENEURSHIP
FACULTY OF BUSINESS ADMINISTRATION
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Perceptions of Career Opportunities in the Marine Industry in Newfoundland and Labrador

High School students

Report

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RESULTS

The information and data gathered in the survey were analyzed using SPSS statistical software. Most of the analysis consisted of frequency distributions and cross-tabulations to determine commonality of responses and to investigate the impact of pre-existing knowledge and experience.

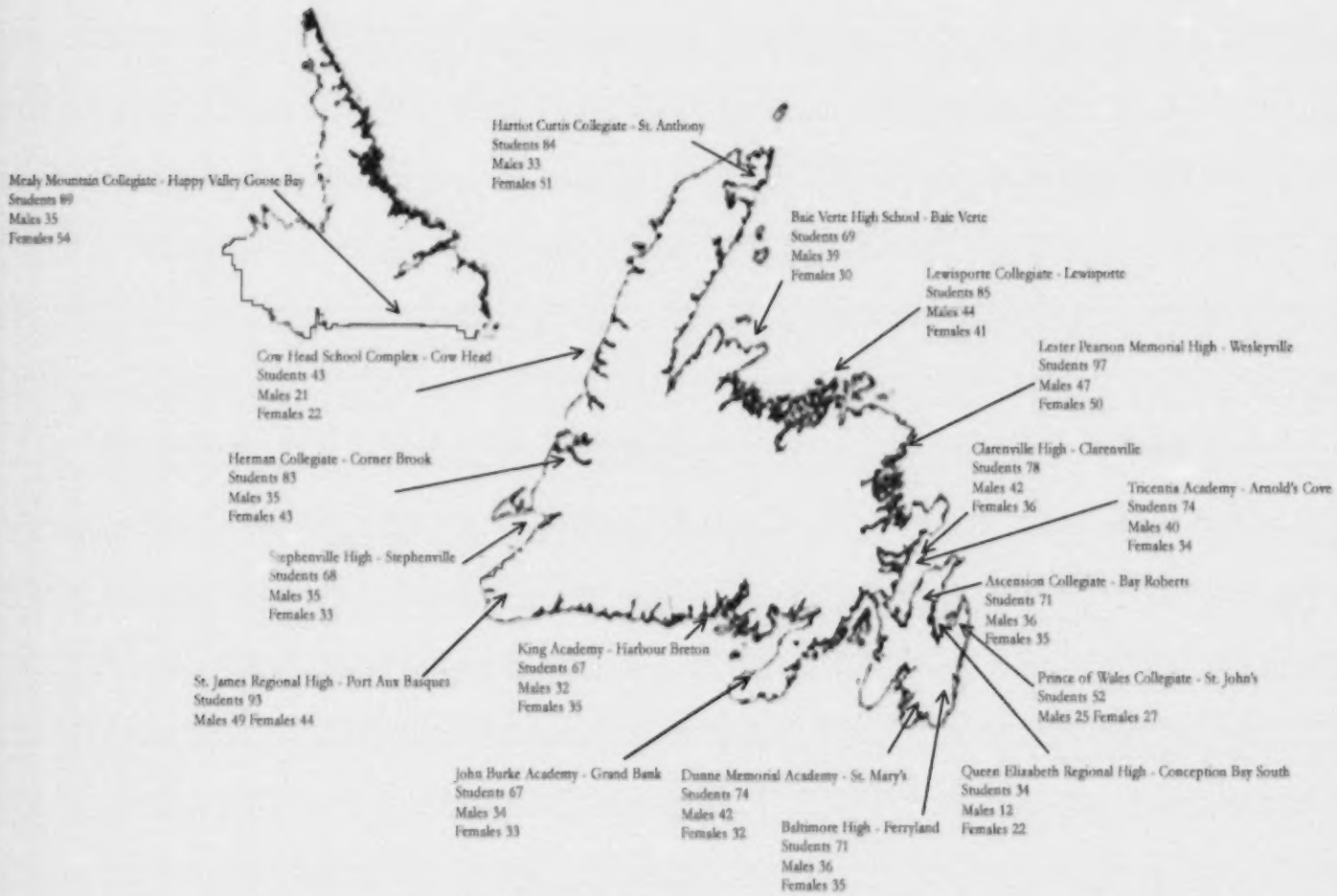
A Project Working Group of the Marine Careers Secretariat reviewed the school list and 18 schools from around the province were selected to ensure the best geographical representation. At least one high school from each school district across Newfoundland and Labrador participated in the study.

Four schools were chosen to function as a control group. These were St. James Regional High (Port Aux Basques), King Academy (Harbour Breton), Lewisporte Collegiate (Lewisporte), and John Burke Academy (Grand Bank). These schools were selected because of their location in areas of the province (southwest coast, south coast, Notre Dame Bay, and the Burin Peninsula) with higher than normal concentrations of practicing mariners, a tradition of seafaring, and higher than normal recruitment to marine transportation programs at the Marine Institute. Data collected from students in these schools were compared to data collected from all schools to determine whether there were significant differences between general student perceptions and the perceptions of students in areas of the province with a recognized involvement in the marine sector.

Analysis based on location was also performed. For the purposes of this study, Herdman Collegiate and Prince of Wales Collegiate were identified as schools from urban centres. The remaining schools were considered to be located in rural areas. Gender analysis was also performed on the majority of questions. The PJG highlighted various aspects of the analysis that it felt was most significant; the Women's Policy Office, Government of Newfoundland and Labrador, conducted additional analysis based on gender and this is included.

There were 131 communities and a total of 1291 high school students involved in the study. Diagram 1 depicts the 18 schools and respective locations that participated in the study.

DIAGRAM 1: MAP OF SCHOOLS SURVEYED



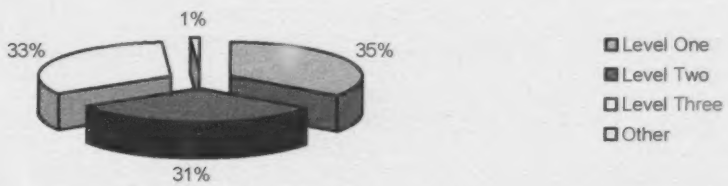
1.0 BACKGROUND INFORMATION

The purpose of the first series of questions was to garner information on the profile of high school students as it relates to grade level, gender, diversity group, and the level of consideration and intent of the students to attend a post-secondary institution.

i) Grade Level

A class of students from each of levels I, II, and III at each high school was chosen to respond to the survey. Each grade level represented approximately one-third of the respondents in the sample.

CHART 1: GRADE LEVEL



According to gender, approximately one-third of both male and female students were in each of the grade levels. These data are illustrated in detail in Table 1.

TABLE 1

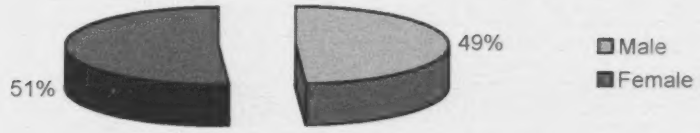
GRADE LEVEL BASED ON GENDER

Gender	1	2	3	Total %
Male	35.0 %	30.9 %	33.1 %	100.0 %
Female	34.8 %	30.5 %	33.8 %	100.0 %

ii) Gender

Overall, there was an even division between the number of males and the number of females who responded to the survey. Data collected indicated that just over half (51.0%) of the students surveyed were female, while slightly under half (49.0%) were male.

CHART 2: GENDER

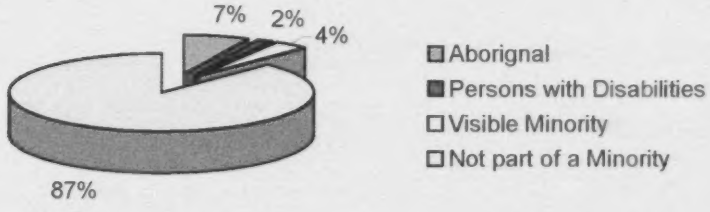


The distribution of male and female students is the same within each grade level as it is overall, that is approximately a 50/50 split.

iii) Diversity Groups

The data collected indicated the diversity of the group surveyed. Approximately 7.0% of the high school students who responded to the question identified themselves as aboriginal, 1.8% as persons with disabilities, and 3.6% as members of a visible minority.

CHART 3: DIVERSITY GROUPS



Diversity groups were further examined on the basis of gender and region. Of those students who responded to this question, 88.0% of both males and females did not identify themselves as part of a minority. As well, approximately 89.0% of those from rural areas did not identify themselves as part of a minority; just over 82.0% of those from urban areas did not identify themselves as part of a minority. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

iv) Post-Secondary Education Opinions

Eighty-five percent of respondents confirmed that they intended to continue their education through a post-secondary institution after completion of high school.

Those high school students who indicated an intention to commence post-secondary education were given the opportunity to rank the top three institutions they were planning or considering attending upon graduating from high school. Memorial University of Newfoundland and Labrador was ranked either first, second or third by 73.5% of these students. The College of the North Atlantic was ranked either first, second or third by 57.4% of these students, followed by other universities and the Marine Institute at 42.4% and 35.9%, respectively as the institution they are planning or considering attending. There were a number of students (19.3%) who ranked the "undecided" choice either first, second or third. Table 2 provides a summary of data collected regarding post secondary studies. It should be noted that the response percentages indicated in Table 2 reflect the opinions of those students who intend to pursue post-secondary studies. A list of other responses can be found in Appendix II of the supplementary document: **Appendices of the Public Perception Survey.**

TABLE 2

POST SECONDARY INSTITUTIONS
n = 1090

6. Please rank the top three institutions you are planning or considering attending, with 1 being the most preferred, 2 being the next preferred and 3 being the next one. (*Only rank the top 3*)

Institution	1	2	3	Total %
Memorial University of Newfoundland	42.9 %	21.3%	9.3 %	73.5 %
College of the North Atlantic	21.7 %	19.7 %	16.0 %	57.4 %
Other university	7.9 %	20.3 %	14.2 %	42.4 %
Marine Institute	5.5 %	14.2 %	16.2 %	35.9 %
Undecided	3.3 %	1.8 %	14.1 %	19.3 %
Other public college	1.7 %	6.4 %	8.2 %	16.2 %
Private College	1.9 %	2.3 %	5.2 %	9.4 %
Other	6.0 %	2.1 %	3.0 %	11.1 %

Post-secondary institutions were also examined on the basis of gender (see gender distribution table below). Of those students who indicated an intention to pursue a post-secondary education (85.0%), Memorial University was ranked as the most preferred by 35.4% of males and 64.6% of females. Fifty-seven percent of males ranked the College of the North Atlantic as the most preferred institution compared to 42.8% of females. There were 48.8% of males who chose another university as the most preferred compared to 51.2% of females. The Marine Institute was the most preferred by 76.7% of males compared to 23.3% of females. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

Table 3: Gender Distribution

Post-Secondary Institution	Ranked 1		Ranked 2		Ranked 3	
	Male (%)	Female (%)	Male (%)	Female (%)	Male (%)	Female (%)
Memorial University	35.4	64.6	48.3	51.7	59.4	40.6
College of the North Atlantic	57.2	42.8	46.9	53.1	41.1	58.9
Other university	48.8	51.2	33.5	66.1	40.3	59.7
Marine Institute	76.7	23.3	52.9	47.1	47.2	52.8
Undecided	33.3	66.7	55.0	45.0	46.1	53.9
Other public college	55.6	44.4	47.1	52.9	58.4	41.6
Private college	33.3	66.7	72.0	28.0	40.4	59.6
Other	49.2	49.2	52.2	47.8	39.4	60.6

Based on region, students in urban centres of the province indicated a higher likelihood of attending a post-secondary school, 95.4%, in comparison to 84.1% of students in rural areas. Thirty-six percent of students in rural areas who planned to attend a post-secondary institution ranked the Marine Institute as either first, second, or third choice compared to 31.0% of urban students. Seventy-two percent of students in rural areas who planned to attend a post-secondary institution ranked Memorial University as either first, second, or third choice compared to 85.0% of urban students. For the College of the North Atlantic, the percentages were 59.0% for rural students and 44.0% for urban students. When considering only the first choice, 5.7% of students in rural areas who planned to attend a post-secondary institution indicated the Marine Institute, compared to 3.9% of urban students. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

When asked about plans for post-secondary education, 15.0% of the students indicated they did not intend or were undecided as to continuing their education beyond high school. A variety of reasons were provided as to why post-secondary education would not be pursued. Slightly under half (48.8%) of these students indicated they were undecided about their career path. Table 4 provides a list of reasons for not attending or being undecided about post-secondary studies and the percentage of students who selected a particular reason. It should be noted that the response percentages indicated in Table 4 reflect the opinions of those students who provided reasons why they do not intend to pursue or are undecided about post-secondary studies (i.e., approximately, 15.0% of respondents).

TABLE 4

REASONS FOR NOT ATTENDING OR BEING UNDECIDED ABOUT POST-SECONDARY STUDIES

n = 166

			Gender Distribution*	
Reasons	**# of Students**	**% of Students**	**Male (%)**	**Female (%)**
Undecided as to a career option	81	48.8 %	61.7	38.3
Low grades	54	32.5 %	57.4	42.6
Lack of interest	34	20.5 %	67.6	32.4
Already have a job after graduation	23	13.9 %	73.9	26.1
Cost of program	20	12.0 %	70.0	30.0
Lack of information	18	10.8 %	72.2	27.8
Cannot afford it	14	8.4 %	57.1	42.9
Other	29	17.4 %	65.5	34.5
Note: Total percentage exceeds 100% due to multiple mentions by students.			* Gender breakdown provided by the Women's Policy Office	

Reasons for not planning or being undecided about post-secondary studies were reviewed on the basis of gender. Of the 48.8% of the students who indicated their reason was that they were undecided as to career options, 61.7% were male and 38.3% were female. Of the nearly 33.0% of the students who indicated that low grades was the reason, 57.4% were male and 42.6% were female. Another reason for not planning or being undecided about post-secondary education was lack of interest (indicated by 67.6% of males and 32.4% of females). These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

Reasons for not planning or being undecided about post-secondary studies were also reviewed on the basis of region. The results indicated an almost even split between students from rural areas and those from an urban centre who cited their reason to be "undecided as to career options." It is interesting to note, however, that low grades was indicated by 33.3% of those students from rural areas and not mentioned by students from urban areas. As well, reasons such as lack of interest (21.0%), already have a job after graduation (14.2%) and lack of information (11.1%) were indicated by those students from rural areas but not by their urban counterparts as reasons for not attending or being undecided about post-secondary studies. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

Data were collected as to what the students considered as positive factors in choosing a career. Wages was indicated by 83.3% of students as the most significant factor in choosing a career. Two-thirds (67.3%) of students indicated that benefits (health care, pension, etc.) were also very important. In addition, job stability, variety and excitement, and year round full-time work rated relatively high. Table 5 provides a summary of data collected regarding factors positively influencing career choice.

TABLE 5

POSTIVE FACTORS IN CHOOSING A CAREER

n = 1291

			Gender Distribution*	
Factors	**# of Students**	**% of Students**	**Male (%)**	**Female (%)**
Wages	1063	82.3 %	48.3	51.7
Benefits (health care, pension)	859	66.5 %	46.3	53.7
Job stability	759	58.8%	45.3	54.7
Variety and excitement	732	56.7 %	43.4	56.6
Year round full-time work	680	52.7%	47.5	52.5
Flexible work hours	649	50.3 %	44.8	55.2
Leisure time	607	47.0 %	50.2	49.8
Opportunity to travel	570	44.1 %	42.5	57.5
High quality family life	564	43.7 %	47.2	52.8
Opportunity for promotion	550	42.6 %	48.2	51.8
Professional certification	333	25.8 %	38.7	61.3
Working outside	303	23.5 %	60.7	39.3
Live in own community	255	19.8 %	49.8	50.2
Prestige/status	237	18.4 %	54.4	45.6
Working inside	218	16.9 %	45.4	54.6
Requires physical labour	199	15.4 %	73.4	26.6
Other	63	4.9 %	50.8	49.2
Note: Total percentage exceeds 100% due to multiple mentions by students.			*Gender breakdown provided by the Women's Policy Office	

Factors positively influencing choice of a career were examined on the basis of gender and several significant variances were noted. Female students displayed a higher percentage in the following factors compared to male students: job stability (54.7% females, 45.3% males); variety and excitement (56.6% females, 43.4% males); opportunity to travel (57.5% females, 42.5% males,); professional certification (61.3% females, 38.7% males); and working inside (54.6% females, 45.4% males). Factors such as working outside (60.7% males, 39.3% females) and requires physical labour (73.4% males, 26.6% females), were rated higher by male students. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

In terms of region, almost the same percentage of rural students (83.0%) and urban students (85.0%) indicated wages as a positive factor in choosing a career. Interestingly, there were significant differences by region for the following factors: working inside (18.1% rural, 7.1% urban); requires physical labour (16.3% rural, 9.8% urban); live in own community (18.9% rural, 32.1% urban); and job stability (58.4% rural, 71.4% urban). These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

To determine who influenced the respondents' decision to pursue a post-secondary education and/or career, students were asked to rank from 1 to 3 their strongest influencers. Overall, students ranked their parents (51.3%) as the most influential people when deciding to pursue a post-secondary education and/or career, followed by friends at 10.8%. Table 6 provides the list in order of the strongest influencers.

TABLE 6 INFLUENCERS ON DECISION TO ATTEND POST-SECONDARY STUDIES n = 1291				
9. **Please rank the top three "influencers" on your decision to pursue a post-secondary education and/or career. Please rank their level of influence by placing the number "1" beside the strongest influencer, "2" beside the next strongest influencer and "3" beside the next strongest. (*Only rank the top 3*)**				
Influencer	**1**	**2**	**3**	**Total %**
Parents	51.3 %	20.8 %	8.7 %	80.8 %
Friends	10.8 %	23.2 %	26.3 %	60.4 %
Brothers and sisters	8.5 %	16.2 %	11.5 %	36.2 %
Media (i.e. movies, television, newspaper, etc.)	5.8 %	7.0 %	11.9 %	24.6 %
Teachers	4.3 %	17.2 %	22.3 %	43.7 %
School guidance counsellor	1.9 %	3.9 %	6.2 %	11.9 %
Other	9.1 %	2.8 %	2.7 %	14.6 %

Parents were indicated as the strongest influencer nearly five times as often as friends and more than 12 times as often as teachers. Guidance counsellors were the least often cited as the strongest influencer. While teachers were the second least cited as the strongest influencer, overall they do appear to have some influence on student's decision-making.

These data were reviewed on the basis of gender (see gender distribution table below). Of the students who selected parents as their strongest influencer, 43.0% were males and 57.0% were females. Of those students who chose friends as the strongest influencer, 53.6% were males and 46.4% were females. Males and females were almost evenly distributed in selecting brothers and sisters as influencers in their decision to pursue a post-secondary education. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

Table 7: Gender Distribution

Influencer	Ranked 1		Ranked 2		Ranked 3	
	Male (%)	Female (%)	Male (%)	Female (%)	Male (%)	Female (%)
Parents	42.9	57.1	50.7	49.3	54.1	45.9
Friends	53.6	46.4	48.8	51.2	46.9	53.1
Teachers	45.5	54.5	41.6	58.4	47.2	52.8
Brothers and Sisters	51.4	48.6	45.0	55.0	42.6	57.4
Media	64.9	35.1	51.1	48.9	56.9	43.1
Others	52.5	47.5	47.2	52.8	42.9	57.1
School guidance counsellor	58.3	41.7	54.0	46.0	36.3	63.8
Note: Gender breakdown provided by the Women's Policy Office						

Further analysis of the gender distribution table above reveals that females have a greater tendency than their male counterparts to rely on more formal authorities, particularly parents and teachers. Males appear to rely more heavily on media than do females.

Furthermore, analysis was conducted according to grade level to determine whether there was any significant difference in the ranking of influencers with increased level of education. This analysis revealed that of the students who ranked school guidance counsellors as an influencer (11.9%), 17.1% were students in Level III compared to 10.6% of Level II students and 8.4% of Level I students. This indicates that, while school guidance counsellors are essentially a last resort for students seeking career information, Level III students are twice as likely as Level I students to seek such information from their guidance counsellors. Significant differences were not revealed between the grade levels and other listed influencers.

In terms of where students seek information when attempting to make a career choice, respondents principally availed of the Internet (78.2%), followed by other people (58.1%) and career fairs (37.1%). Additional data collected are presented in the Table 8. A list of other responses can be found in Appendix II of the supplementary document: **Appendices of the Public Perception Survey.**

TABLE 8

WHERE YOU SEEK INFORMATION WHEN MAKING A CAREER CHOICE
n= 1277

			Gender Distribution*	
Source	**# of Students**	**% of Students**	**Male (%)**	**Female (%)**
Internet	999	78.2 %	46.6	53.4
Other people	741	58.1 %	44.0	56.0
Career fairs	474	37.1 %	42.1	57.9
Government department/ agency	333	26.1 %	53.2	46.8
School posters	259	20.3 %	44.8	55.2
TV commercials	259	20.3 %	59.1	40.9
Educational videos	157	12.3 %	57.1	42.9
Community cable channels	112	8.8 %	45.5	54.5
Other	190	14.9 %	34.7	65.3
Note: Total percentage exceeds 100% due to multiple mentions by students.			*Gender breakdown provided by the Women's Policy Office	

These data were also reviewed on the basis of gender and region. Of those students who utilized the Internet for seeking information to make a career choice, 53.4% were female while 46.6% were male. Likewise more females than males utilized career fairs (57.9% female, 42.1% male) and other people (56.0% female, 44.0% male) for seeking information when trying to make a career choice. The sources where males sought information more than females were TV commercials (59.2% males, 40.8% females) and government department/agency (53.2% males, 46.8% females). These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

On the basis of region, of those students from rural areas, 77.5% used the Internet versus 85.6% of urban students. TV commercials was selected by almost 21.0% of students from rural areas compared to 16.0% of urban students. However, students from urban centres selected school posters (27.9%), government department/agency (28.8%) and community cable channels (10.8%) more times than rural students. These data can be reviewed in the

supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

The final question in the 'Background Information' section of the questionnaire asked whether the respondents had decided on a career they would like to pursue. Nearly two-thirds (61.1%) of students indicated they had decided on a career they would like to pursue. A list of other responses can be found in Appendix II of the supplementary document: **Appendices of the Public Perception Survey.**

On the basis of gender, there is little distinction between males' and females' decision as to career path. Approximately, 60.0% of respondents (62.5% female; 59.5% male) indicated they had decided on a career path.

Based on regional distribution, of the students from rural areas, 60.8% had decided on a career choice and 63.4% of students from urban areas had decided on a career choice. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

2.0 MARINE INDUSTRY

2.1 General

Students were given the opportunity to indicate if they were familiar with or interested in pursuing specific marine careers. Overall, students surveyed were not familiar with many marine careers. Students seemed to be most aware of positions in catering (cook/steward) (29.5%), administration (clerical, accounting) (27.5%) and engineering officer (26.8%). The following table provides a summary of student responses regarding their familiarity with marine career choices indicated in the surveys.

TABLE 9

STUDENT FAMILIARITY WITH MARINE CAREERS

n=1291

			Gender Distribution*	
Marine Careers	**# of Students**	**% of Students**	**Male (%)**	**Female (%)**
Catering (cook/steward)	381	29.5 %	47.5	52.5
Administrative personnel	355	27.5 %	46.8	53.2
Engineering officer	346	26.8 %	44.2	55.8
Maintenance personnel	337	26.1 %	43.6	56.4
Deck officer	336	26.0 %	46.7	53.3
Deck hand/engineering assistant	335	25.9 %	46.9	53.1
Communications personnel	305	23.6 %	48.8	51.1
Design personnel	283	21.9 %	44.5	55.5
None of the above	463	35.9%	41.6	58.1
Note: Total percentage exceeds 100% due to multiple mentions by students.			*Gender breakdown provided by the Women's Policy Office	

These data were also examined on the basis of gender and region. When analyzing the results, the common theme is that females were more familiar with the listed positions than their male counterparts. For example, maintenance personnel (56.4% female, 43.6% male), engineering officer (55.8% female, 44.2% male) and design personnel (55.5% female, 44.5% male) were cited more frequently by females. For the other listed careers, the male and female familiarity was similar. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

Students in rural areas were more familiar with the position of deck officer (43.9%) than their urban counterparts (39.3%). The remaining positions listed were more familiar to students in urban centres than students in rural areas. For instance, catering personnel and administrative personnel were most familiar to urban students, indicated by 59.0% and 54.1%, respectively. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

Subsequent to determining the familiarity of the students with marine careers, students were asked to identify those marine careers they were interested in pursuing. Less than one-fifth, (17.5%) of the students indicated they were interested in pursuing an engineering officer career, followed by a career in design (15.1%) and maintenance (13.4%).

It should be noted that the data regarding student interest in careers as engineering officer and deck officer seem at variance with trends in industry, marine certification records, and the recruitment experience of training centres such as the Marine Institute. Studies of the marine transportation sector (such as the BIMCO/ISF studies and *Here the Tides Flow*) indicate a significantly greater shortage of engineering officers than deck officers. Transport Canada records indicate a higher number of certificates issued to deck officers than to engineering officers, and the Marine Institute has consistently higher enrolment in its Nautical Science Technology program than in its Marine Engineering Technology program. This discrepancy could indicate a flaw in the terminology used in the survey instrument to designate these career options. Within the industry and agencies closely associated with the industry, the term Deck Officer is used to distinguish navigation officers (including Captain, First Mate, Second Mate, Third Mate, Watchkeeping Mate) from engineering officers. While it is reasonable to assume that students would recognize the term "engineering officer" as including all officers who work in engineering, it is not reasonable to assume that students unfamiliar with the industry would also recognize that the term "deck officer" would include all other ships' officers. It is possible that survey respondents mistook the term to refer to ships' officers with duties specific to the deck operations of a vessel. In hindsight, the survey might have provided data more in line with industry realities if the survey had used the term "navigation officer" instead of "deck officer", or if it had specified career options individually (e.g., Captain, Mate, Navigation Officer).

Table 10 provides a summary of the variety of marine careers in which students expressed an interest.

TABLE 10

STUDENT INTEREST IN MARINE CAREERS

n=1291

			Gender Representation*	
Marine Careers	**# of students**	**% of Students**	**Male (%)**	**Female (%)**
Engineering officer	226	17.5 %	76.1	23.9
Design personnel	195	15.1 %	67.7	32.3
Maintenance personnel	173	13.4 %	83.2	16.8
Deck hand/engineering assistant	146	11.3 %	78.8	21.2
Catering (cooks/stewards)	143	11.1 %	38.5	61.5
Deck officer	120	9.3 %	73.3	26.7
Communications personnel	95	7.4 %	52.6	47.4
Administrative personnel	90	7.0 %	27.8	72.2
None of the above	463	35.9%	41.6	58.1
Note: Total percentage exceeds 100% due to multiple mentions by students.			*Gender breakdown provided by the Women's Policy Office	

Student responses regarding interest in marine careers were further reviewed on the basis of gender and region. Male students showed a higher interest in most of the marine careers than female students. The two careers that females showed a higher interest in were administration (72.2%) and catering (61.5%). There was a considerable variance between males and females in marine careers such as maintenance personnel (83.2%), deck hand/engineering assistant (78.8%) engineering officer (76.1%) and deck officer (73.3%). These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

More students in rural areas of the province showed an interest in engineering officer (29.6%), design (25.7%), maintenance (23.1%) and deck hand/engineering assistant (19.5%) than did students in urban centres. Those careers in catering, communications, and deck officer were of slightly more interest to urban students. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

An interesting result is the percentage of students who were not familiar with or interested in any of the listed marine careers, indicated by 35.9% of the respondents. Based on gender, of those students who were neither familiar with nor interested in any of the listed marine careers, 58.4% of them were female while 41.6% were male. A greater percentage of students in urban centres (45.0%) showed a lack of interest in any of the listed careers compared to those in rural regions (36.7%).

Slightly less than half (45.9%) of the students indicated that they, or someone they know, has been employed or connected with the marine industry. Of those who said yes to being involved in or knowing someone in the marine industry, 56.6% indicated that they found the work to be enjoyable, which translates to 341 students.

Based on their knowledge of, and experience with, the marine industry, 46.3% of students were unsure as to choosing a marine career. Almost 35.0% were less likely to choose a marine career and 18.8% were more likely to choose a marine career.

Students were also asked of their interest in pursuing a marine career. Slightly under half of the total respondents (47.6%) indicated that they were not interested in pursuing a marine career. Almost 14.0% were interested and another 38.4% were unsure of their interest in pursuing a marine career.

Students were then asked to indicate the reasons they *were* or *were not* interested in pursuing a marine career. The primary reasons for pursuing a marine career included personal interest, working at sea/on water, availability of jobs, and salary expectations. Table 11 lists the reasons why students *were* interested in a marine career and the respective number and percentage of students indicating these reasons.

TABLE 11

REASONS FOR PURSUING A MARINE CAREER

n= 156

			Gender Distribution	
Reasons	**# of Students**	**% of Students**	**Male (%)**	**Female (%)**
Personal interest	124	79.5 %	64.2	35.8
Working at sea/on water	101	64.3 %	69.0	31.0
Availability of jobs	90	57.7 %	70.8	29.2
Salary expectations	90	57.3 %	77.5	22.5
Knowledge of marine careers	69	43.9 %	67.6	34.2
Support of others	54	34.4 %	66.0	34.0
Career reputation	44	28.0 %	72.1	27.9
Training/educational requirements	43	27.4 %	71.4	28.6
Cost of education	35	22.3 %	64.7	35.3
Family expectations	25	15.9 %	60.0	40.0
Relocation possibilities	17	10.8 %	82.4	17.6
Health or other personal reasons	14	8.9 %	61.5	38.5
Other	10	6.4 %	70.0	30.0
Note: Total percentage exceeds 100% due to multiple mentions by students.				

As identified in the above table, the data were further analyzed by gender. It is evident from the data, that the percentage of male students indicating the reasons above is greater than the percentage of female students in each case. Of particular significance is the higher percentage of males citing salary expectations as a reason for their interest in a marine career.

Those students who *were not* interested in pursuing a marine career indicated personal interest, having to work at sea/on water and knowledge of marine careers. Table 12 provides the list of reasons students *were not* interested in a marine career and the respective number and percentage of occurrences for each reason.

TABLE 12 REASONS FOR NOT PURSUING A MARINE CAREER n=544				
			Gender Distribution	
Reasons	**# of Students**	**% of Students**	**Male (%)**	**Female (%)**
Personal interest	381	69.9 %	39.1	60.9
Working at sea/on water	261	47.9 %	38.3	61.7
Knowledge of marine careers	148	27.2 %	41.5	58.5
Relocation possibilities	81	14.9 %	51.9	48.1
Training/educational requirements	72	13.2 %	42.3	57.7
Family expectations	70	12.9 %	50.7	49.3
Salary expectations	69	12.7 %	51.5	48.5
Availability of jobs	59	10.8 %	41.4	58.6
Health or other personal reasons	53	9.7 %	39.6	60.4
Cost of education	48	8.8 %	41.7	58.3
Career reputation	45	8.3 %	47.7	52.3
Support of others	34	6.3 %	52.9	47.1
Other	83	15.2 %	56.1	43.9
Note: Total percentage exceeds 100% due to multiple mentions by students.				

As identified in the above table, the data were further analyzed by gender. It is evident from the data that the percentage of female students citing relocation possibilities, family expectations, salary expectations and support of others was higher than the percentage of their male counterparts as reasons for not being interested in a marine career. The remaining listed reasons were cited more often by male students. The biggest variation between male and female students' reasons for not pursuing a marine career were personal interest, working at sea/water, and health and other personal reasons.

These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

2.2 Perceptions

This section of the questionnaire was intended to gauge the perceptions of students with respect to a career in the marine industry. A list of statements was provided to allow the students to rate whether they disagreed or agreed with each of the statements. Statements indicating a positive or negative perception of the marine industry were explored. The data are presented through an indication of the mean or average response to each statement. A mean value of less than 3 indicates a primarily negative perception of the statement; a mean value of greater than 3 indicates a primarily positive perception of the statement. In some cases, however, the mean is not the best indicator of responses, especially if a small number of responses are at the extreme ends of the scale (i.e. 1 or 5 in this case). Therefore, in these instances, the median and/or the mode has also been used for analytical purposes. The median indicates the middle point – one half of the responses were below it and one half were above it. The mode identifies the most frequently cited response(s). Unlike the mean,

the mode is not affected by extreme responses. All three of these analytical measures of data are utilized to examine Tables 13 and 14.

Variety and excitement (3.6), high salaries and benefits (3.5), and good opportunities for promotion (3.5) were notable positive considerations regarding perceptions of careers in the marine industry (mean ratings of 3.5 or greater). However, it is also worth noting that the statements relating to "high salaries and benefits" and "variety and excitement" have a median of 4.0 signifying that one half of the respondents indicated agreed or strongly agreed with these statements. Additionally, for the statements related to "variety and excitement" and "marine careers require going to sea", the mode is 4.0 indicating the majority of responses were that students agreed with these statements. Table 12 illustrates the mean scores for each of these statements. Charts 4 through 7 visually depict the frequency of responses of the aforementioned statements.

TABLE 13

FACTORS WITH RESPECT TO THE MARINE INDUSTRY (MEAN SCORES)

18. On a scale of 1 to 5, where 1 indicates "Strongly Disagree" and 5 indicates "Strongly Agree," please rate the following factors with respect to a career in the marine industry.

	1	2	3	4	5	MEAN SCORE
There is variety and excitement				▲		3.6
There are high salaries and benefits				▲		3.5
There are good opportunities for promotion				▲		3.5
Marine careers are physically demanding				▲		3.4
There are opportunities for professional certification				▲		3.4
Marine careers require going to sea				▲		3.4
There are good hours of work			▲			3.3
Marine careers offer full time year round work			▲			3.3
Marine careers require overtime work			▲			3.3
Jobs are readily available			▲			3.3
Education and training is expensive			▲			3.2
Marine careers often require working in isolated environments			▲			3.2
Education for marine careers is long and challenging			▲			3.1
Marine careers are prestigious			▲			3.1
There are flexible work hours			▲			3.0
Marine careers provide extended time at home			▲			2.9
Little education and training is required		▲				2.6

CHART 4: VARIETY AND EXCITEMENT

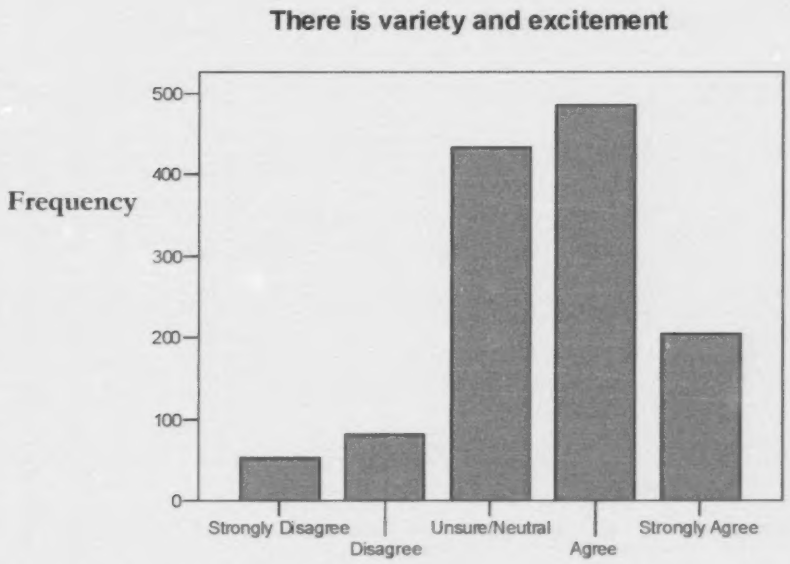


CHART 5: HIGH SALARIES AND BENEFITS

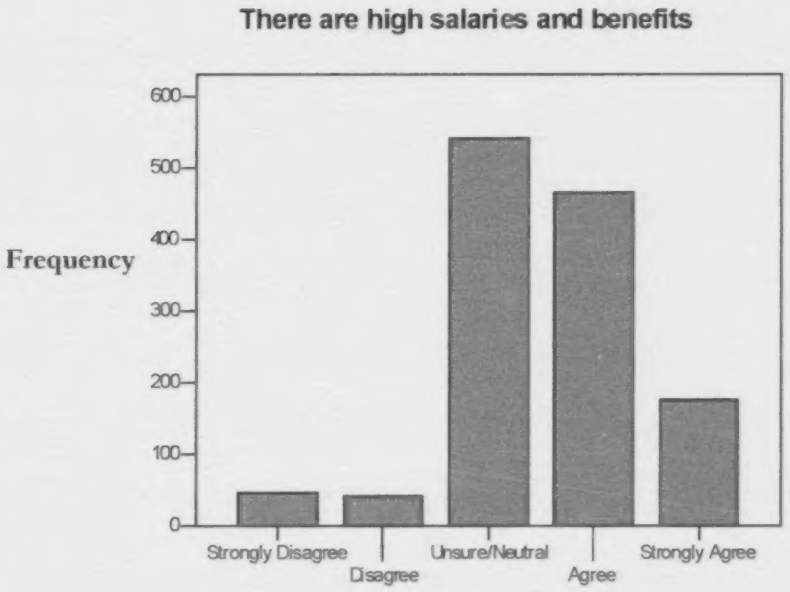


CHART 6: MARINE CAREERS REQUIRE GOING TO SEA

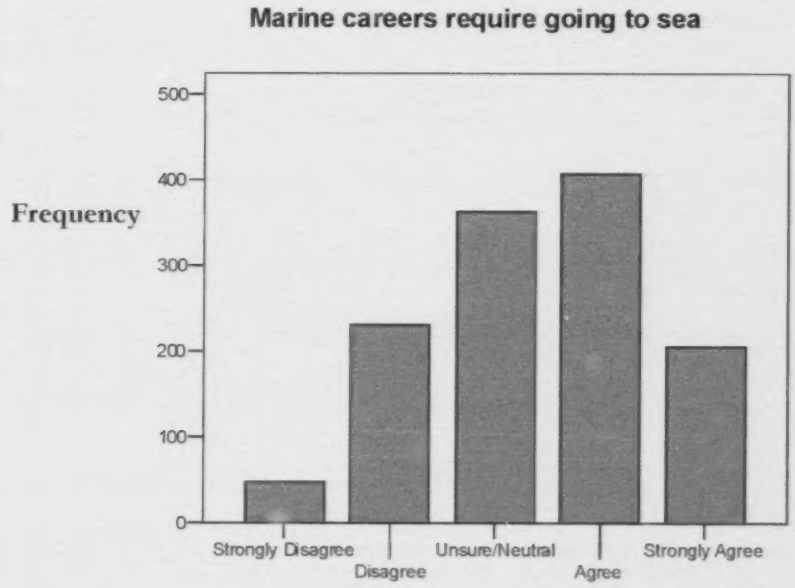
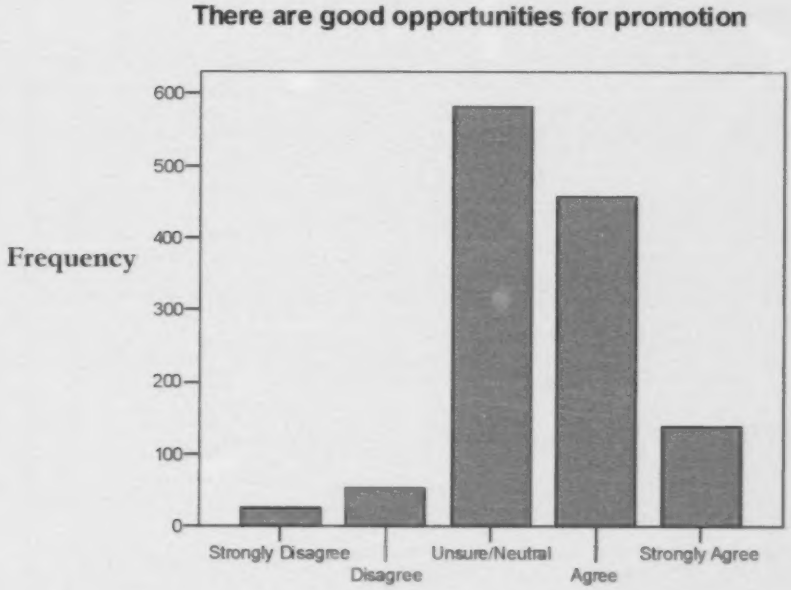


CHART 7: GOOD OPPORTUNITIES FOR PROMOTION



These data were examined on the basis of gender and region. Both male and female students surveyed rated each of the preceding considerations relatively equally. The greatest variance between male and female students occurred in the statement asking if marine careers often require working in isolated environments. Male students more strongly agreed with the statement rating it 3.3/5 compared to female students who rated the statement 3.1/5.

Regional analysis indicated no significant difference between the responses of those in rural and urban areas. The greatest difference related to the perception of high salaries and benefits in the marine industry. Rural areas more strongly agreed with this statement rating it 3.6/5, while urban students rated it 3.4/5. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

2.3 Gender Issues

Statements indicating a positive or negative perception of the marine industry based on gender were also investigated. "Women can work anywhere in the marine industry" (3.8); "There are equal opportunities for men and women in the marine industry" (3.7); "Women and men are treated as equals in marine careers" (3.5) were notable factors relating to the perception of gender equality in marine careers (mean ratings of 3.5 or greater). It is also worth noting that for the statements "There are equal opportunities for men and women" and "Women can work anywhere in the marine industry", both the median and the mode were 4.0 for each of these. That is, one half of the respondents indicated they agreed or strongly agreed with these statements and the most cited response was that they agreed.

"A woman could not be the captain of a ship" (2.0); "Women in the marine industry can only work in shore-based, office and administrative jobs"(2.0); "Women cannot get jobs in the marine industry" (1.9); and "Women are not physically strong enough to work in marine careers" (1.9) were noteworthy as perceptions given less credence (mean ratings of 2.0 or less). These four statements each have a median of 2.0 and a mode of 1.0. This translates to signify that one half of the respondents indicated they disagreed or strongly disagreed with these statements and the most cited response was that they strongly disagreed. Table 13 illustrates the mean scores for each of these statements. Charts 8 through 18 visually depict the frequency of responses of the statements with a mean rating of 3.5 or greater and those statements with a mean rating of 2.5 or lower

TABLE 14

FACTORS WITH RESPECT TO THE MARINE INDUSTRY (GENDER)
(MEAN SCORES)

19. On a scale of 1 to 5, where 1 indicates "Strongly Disagree" and 5 indicates "Strongly Agree," please rate the following factors with respect to a career in the marine industry.

	1	2	3	4	5	MEAN SCORE
Women can work anywhere in the marine industry				▲		3.8
There are equal opportunities for men and women in the marine industry				▲		3.7
Women and men are treated as equals in marine careers				▲		3.5
The marine industry is male dominated			▲			2.8
Women face harassment working the marine industry			▲			2.7
Marine industry careers are intimidating for women			▲			2.6
Having men and women on a vessel as a crew can cause problems			▲			2.4
Ships are not built to properly accommodate women		▲				2.3
Marine industry careers are unsuited for women		▲				2.2
Women do not want to be at sea because they need to be close to home		▲				2.2
A woman could not be the captain of a ship		▲				2.0
Women in marine industry can only work in shore-based, office & administrative jobs		▲				2.0
Women cannot get jobs in the marine industry	▲					1.9
Women are not physically strong enough to work in marine careers	▲					1.9

CHART 8: WORK ANYWHERE

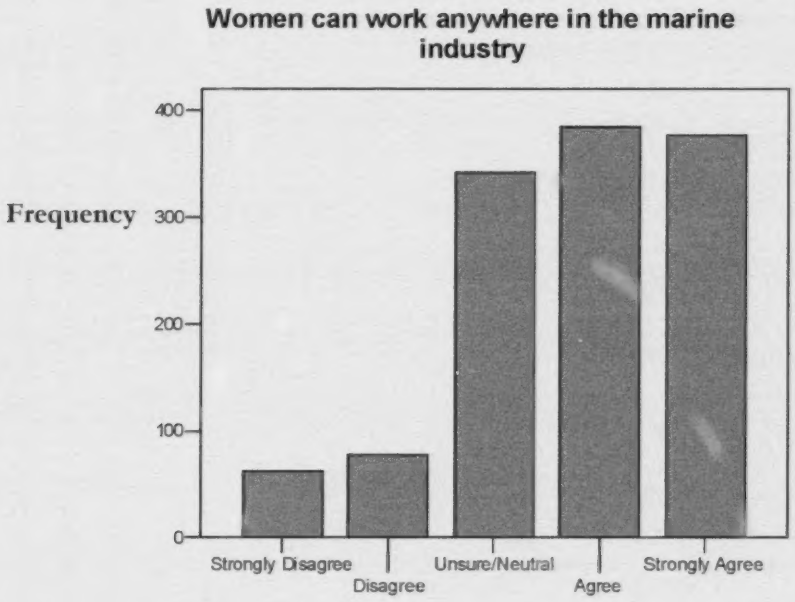


CHART 9: EQUAL OPPORTUNITIES

CHART 10: WOMEN AND MEN ARE TREATED AS EQUALS

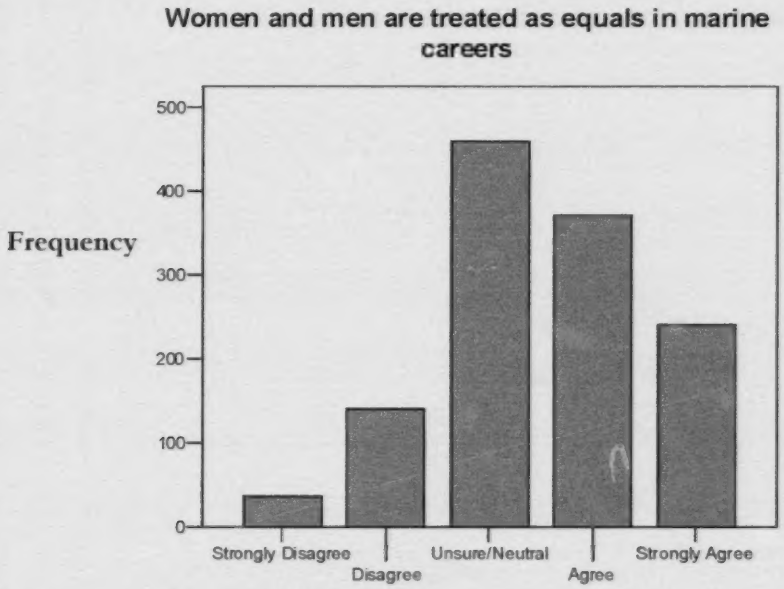


CHART 11: MEN AND WOMEN ON VESSEL AS CREW CAUSE PROBLEMS

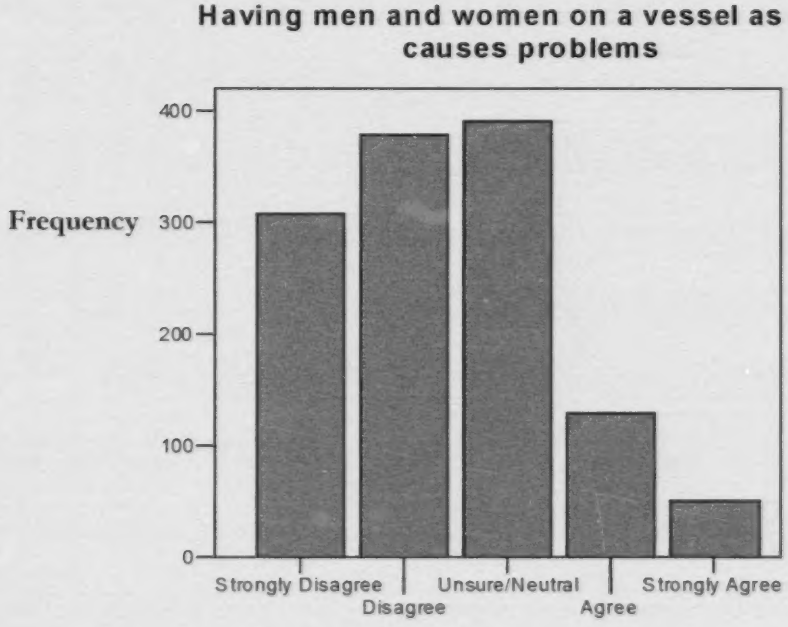


TABLE 12: SHIPS NOT BUILT TO ACCOMMODATE WOMEN

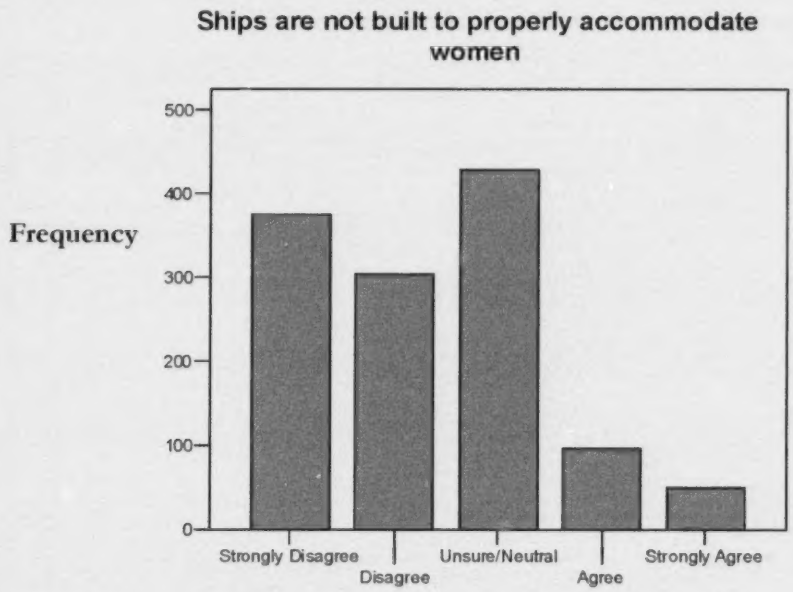


TABLE 13: MARINE CAREERS UNSUITED FOR WOMEN

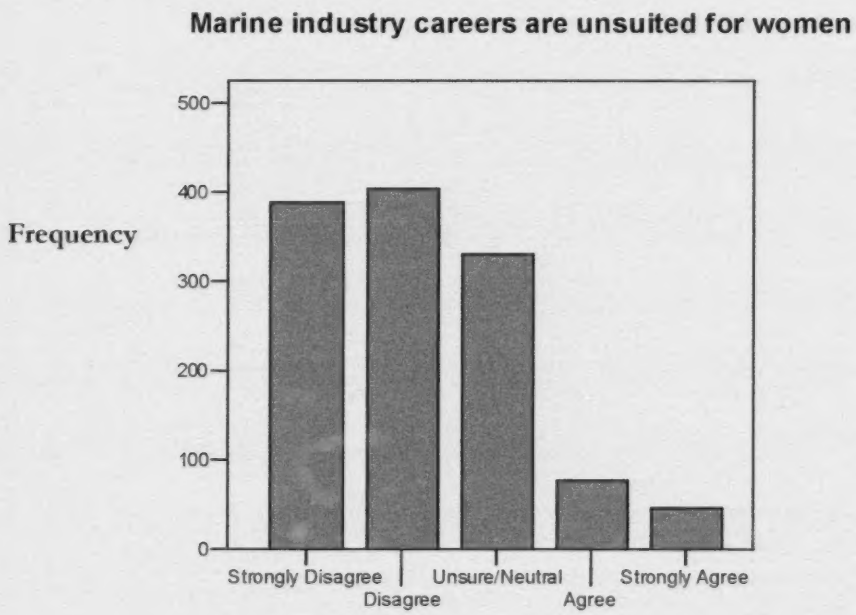


TABLE 14: WOMEN NOT AT SEA, NEED TO BE CLOSE TO HOME

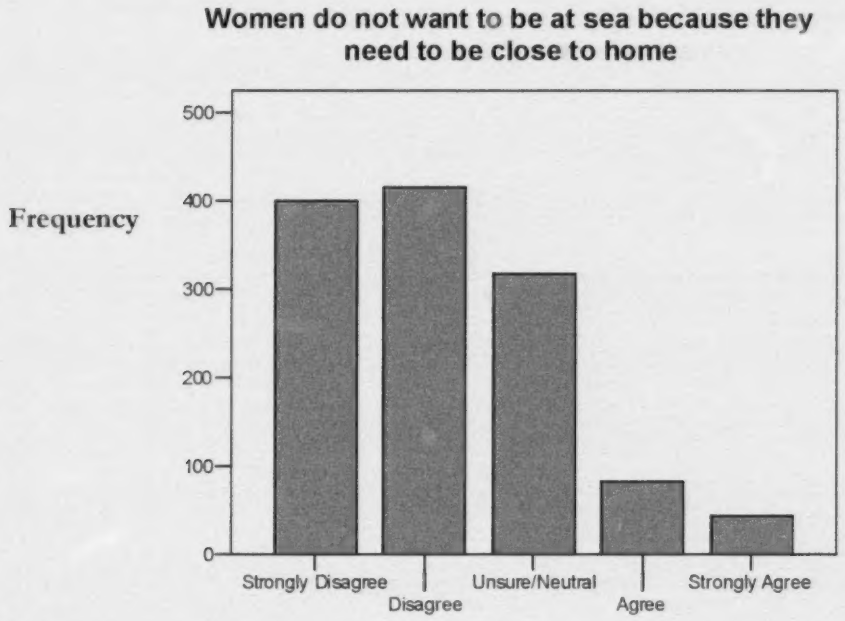


CHART 15: CAPTAIN OF A SHIP

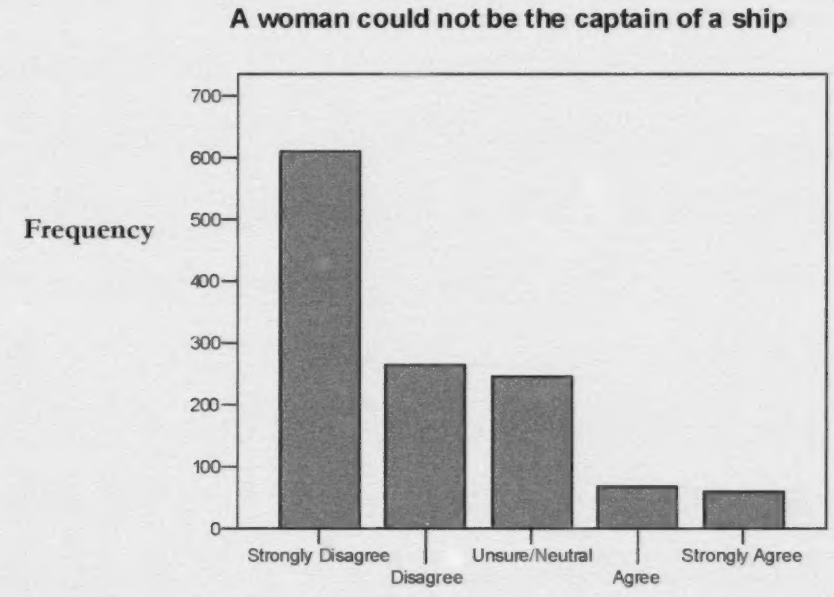


TABLE 16: SHORE-BASED, OFFICE AND ADMINISTRATIVE JOBS

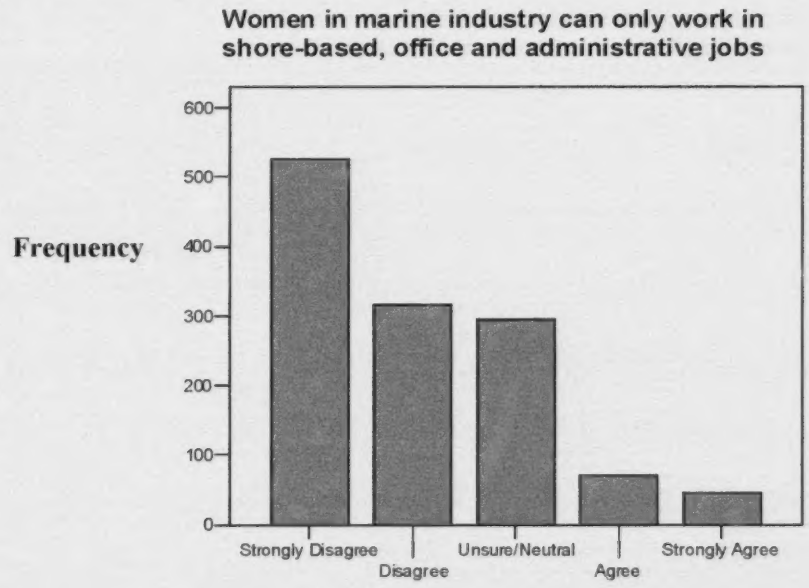


CHART 17: JOBS IN THE MARINE INDUSTRY

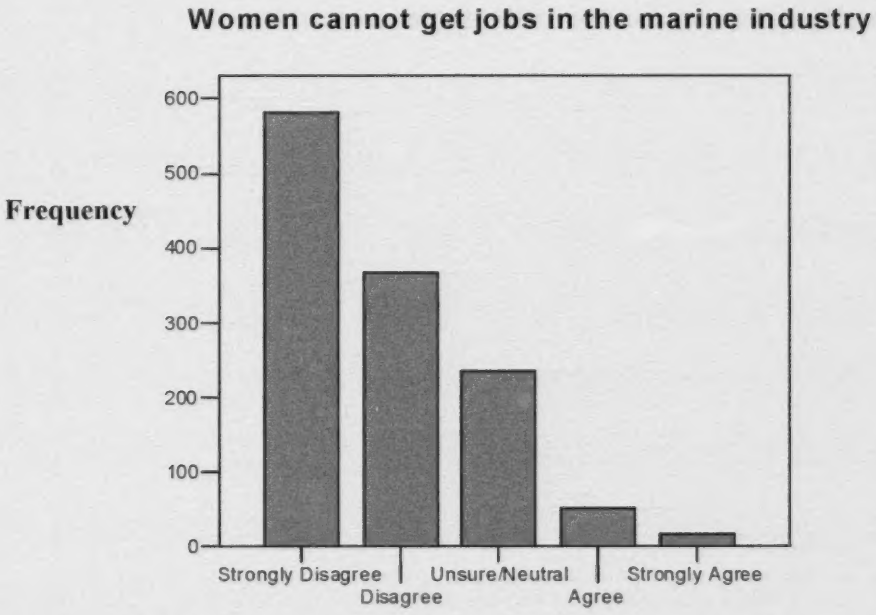
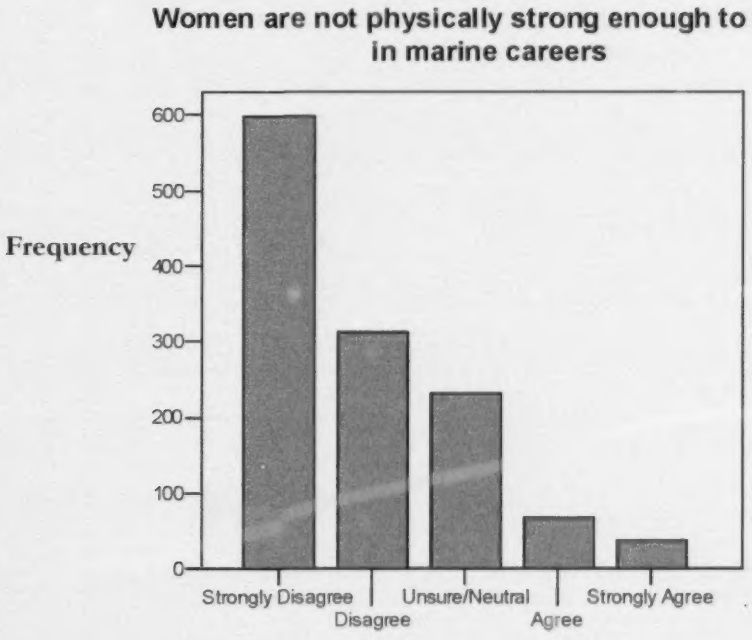


CHART 18: PHYSICAL STRENGTH



These data were further reviewed on the basis of gender and region. Consideration was given to the gender distribution for the following four statements: "A woman could not be the captain of a ship"; "Women in the marine industry can only work in shore-based, office and administrative jobs"; "Women cannot get jobs in the marine industry"; and "Women are not physically strong enough to work in marine careers". In each of these cases, the average response for females was more closely aligned to 'strongly disagree' than it was for their male counterparts.

For the most part, cross-tabulations based on region showed very little variance between rural and urban regions. The statement, "having men and women on a vessel as crew causes problems" showed the greatest difference with the responses from students in rural areas being more closely aligned with 'strongly disagree' than their urban counterparts. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

2.4 Marine Careers

Students were asked to rate how much they knew about shore-based versus at-sea/on water marine careers. A five-point scale, with 1 indicating "Very Little" and 5 indicating "Very Much," was used. As indicated in Table 15, more than 60.0% of students who responded to this question, rated their knowledge of shore based careers at 2 or lower.

TABLE 15 KNOWLEDGE OF SHORE BASED MARINE CAREERS n= 1248				
			Gender Representation	
Rating	# of Students	% of Students	Male (%)	Female (%)
1 out of 5	282	35.2 %	38.7	61.3
2 out of 5	205	25.6 %	53.2	46.8
3 out of 5	236	29.4 %	55.1	44.9
4 out of 5	54	6.7 %	79.6	20.4
5 out of 5	25	3.1 %	64.0	36.0
Don't know	446	35.9%	46.2	53.6

On the basis of gender, male students indicated a higher level of knowledge about shore based careers, giving a mean score of 2.38/5 compared to the mean score of 1.95/5 given by female students. According to region, there was little variance between rural (2.17/5) and urban (2.23/5) students. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

Knowledge of at-sea/on water marine careers was somewhat low by students who responded to this question. Nearly three-quarters (73.8%) of students rated their knowledge of at-sea/on water careers at 3 or lower.

TABLE 16 KNOWLEDGE OF AT-SEA/ON WATER MARINE CAREERS n=1248				
			Gender Representation	
Rating	# of Students	% of Students	Male (%)	Female (%)
1 out of 5	244	28.3%	36.9	63.1
2 out of 5	131	15.2%	47.3	52.7
3 out of 5	262	30.4%	51.9	48.1
4 out of 5	152	17.6%	64.9	35.1
5 out of 5	74	8.6%	72.6	27.4
Don't know	377	30.6%	43.8	56.2

Knowledge of at-sea/on water marine careers was also reviewed on the basis of gender and region. Males indicated a slightly higher knowledge of at-sea/on water careers, giving a mean score of 2.91/5 compared to the 2.33/5 mean rating given by female students. There was little variance between rural (2.64/5) and urban (2.53/5) students. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

In answering this question, 446 students (35.9%) indicated they did not know enough about short-based careers to rate their knowledge. Similarly, 377 students (30.6%) indicated they did not know enough about at-sea/on water careers to rate their knowledge.

Nearly 65.0% of students indicated that they would be willing to work away from home for an extended period of time. It is interesting to note that nearly 75.0% of male respondents indicated they would be willing to work away from home for an extended period of time compared to just over 60.0% of females who responded in the same way. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

2.5 Educational and Training Requirements

In this section, students were asked about their opinions on educational and training requirements needed for working in the marine industry. Students indicated that teamwork (86.2%), navigational skills (79.2%), and mechanical training (75.0%) were the most needed skills for a marine career. The following table provides a summary of student rankings of a list of skills provided in the survey.

TABLE 17

SKILLS NEEDED FOR A MARINE CAREER

n=1242

			Gender Distribution*	
Skills	**# of Students**	**% of Students**	**Male (%)**	**Female (%)**
Teamwork	1069	86.2 %	46.4	53.6
Navigational skills	983	79.2 %	48.4	51.6
Mechanical training	929	75.0 %	48.0	52.0
Leadership	900	72.5 %	45.2	54.8
Communication	854	68.7 %	47.1	52.9
Computer automation	838	67.5 %	47.0	53.0
Planning/organizing	782	63.0 %	45.8	54.2
Management skills	777	62.5 %	46.1	53.9
Interpersonal skills	743	59.9 %	47.5	52.5
Blueprint reading	673	54.3 %	50.2	49.8
Other	103	8.4 %	62.1	37.9
Note: Total percentage exceeds 100% due to multiple mentions by students.			*Gender breakdown provided by the Women's Policy Office	

Furthermore, these data were reviewed on the basis of gender and region. The most notable variance between female and male students in selecting a skill needed for a marine career was in the skill of leadership capabilities (78.1% females, 66.6% males). Teamwork (91.0% females, 81.3% males); planning/organizing (67.2% females, 58.6% males); and, management skills (66.4% females, 58.6% males) also revealed significant variances.

According to region, the biggest variation between rural and urban students in the skills needed for a marine career was in the areas of interpersonal skills (70.6% urban, 58.9% rural); navigational skills (88.1% urban, 78.3% rural); and communication skills (73.4% urban, 68.3% rural). The remaining skills selected varied within 3 percentage points of being the same whether the students were from urban or rural areas. These data can be reviewed

in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

Overall, students believed that the minimum level of education required to enter into a marine career is graduation from high school (50.0%). The following table provides an overview of the perceived minimum levels of education for a marine career.

TABLE 18

MINIMUM LEVEL OF EDUCATION REQUIRED

n=1237

			Gender Distribution*	
Education Level	**# of Students**	**% of Students**	**Male (%)**	**Female (%)**
High school graduate	618	50.0 %	53.6	46.4
Public college	256	20.7 %	40.2	59.8
Bachelor's degree	93	7.5 %	34.4	65.6
Private college certificate/ diploma	79	6.4 %	46.8	53.2
Some high school	79	6.4 %	45.6	54.4
Masters or higher	45	3.6 %	46.7	53.3
Completed Grade 9	44	3.6 %	69.8	30.2
Other	23	1.8 %	56.5	43.5
Total	1237	100.0%	*Gender breakdown provided by the Women's Policy Office	

These data were examined on the basis of gender and region. Slightly more than half of male students (54.9%) and less than half of female students (45.3%) believed that graduation from high school is the minimum level of education required for entering the marine industry. With respect to public colleges, 17.1% of males and 24.2% of females felt this was the minimum level of education required for entering the marine industry. Approximately, half (50.7%) of the students from rural areas of the province believed that high school is the minimum level of education required compared to 42.2% of students surveyed in urban centres. The only other significant variance occurred for bachelor's degree, with 7.2% of students from rural areas and 11.0% of students from urban areas citing this as a minimum level of education required. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

In terms of perceptions regarding the best place to receive skills required for a marine career, respondents provided the data presented in the following table. Not surprisingly, nearly 80.0% of students indicated the Marine Institute as one of the places to obtain an education for marine careers.

TABLE 19 WHERE TO OBTAIN SKILLS FOR A MARINE CAREER n=1250				
			Gender Distribution*	
Location	# of Students	% of Students	Male (%)	Female (%)
Marine Institute	984	78.8 %	48.6	51.4
Memorial University	534	42.8 %	48.7	51.3
College of the North Atlantic	438	35.1 %	50.9	49.1
On-the-job	389	31.3 %	51.2	48.8
Other universities	310	24.8 %	48.1	51.9
Don't know	212	17.0 %	41.5	58.5
Other public colleges	211	16.9 %	48.8	51.2
Private colleges	150	12.1 %	46.7	53.3
Other	39	3.2 %	69.2	30.8
Note: Total percentage exceeds 100% due to multiple mentions by students.			*Gender breakdown provided by the Women's Policy Office	

These data were reviewed further on the basis of gender and region. The greatest variation between male and female students on where they could receive skills for the marine industry was with the College of the North Atlantic (36.4% male, 33.8% female) and 'on the job' (32.5% male, 29.8% female). It is interesting to note that for Marine Institute (78.0% males, 79.4% females) and Memorial University (42.4% males, 43% females) there was a slightly higher percentage of females than males who felt they could receive skills for the marine industry at these locations. Based on region, the only significant variance occurred for the College of the North Atlantic with 48.6% of urban students and 33.9% of rural students citing this institution. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

Approximately one-quarter (26.5%) of students responding to this question (1243) felt that it is necessary to leave the province in order to obtain training for a marine career. Based on gender 30.0% of males and 23.1% of females believed that it is necessary to leave the province to obtain training needed for a career in the marine industry. More rural students (27.3%) than urban students (18.5%) believed it is necessary to leave the province to receive the proper training for a marine career. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

2.6 Financial Incentives/ Inducements

Of the students who responded to the question on how salaries in the marine industry compare to the average salary of Newfoundlanders and Labradorians employed in other sectors, one-half didn't know or were unsure while 34.9% believed the salaries were higher. Table 20 provides an overview of student perceptions of salary comparisons between the marine industry and other sectors in the province.

TABLE 20 SALARY COMPARISON n= 1234				
			Gender Distribution*	
Salary Comparison	**# of Students**	**% of Students**	**Male (%)**	**Female (%)**
Do not know/unsure	618	50.0 %	41.7	58.3
Salaries are higher	431	34.9 %	53.8	46.2
Salaries are the same	120	9.7 %	55.0	45.0
Salaries are lower	65	5.4 %	69.2	30.8
Total	1234	100.0 %	*Gender breakdown provided by the Women's Policy Office	

These data were examined further on the basis of gender and region. According to gender, 38.6% of male students compared to 31.4% of female students believed that salaries are higher for those employed in the marine industry compared to the average salary of Newfoundlanders and Labradorians employed in other sectors. There were more female students (56.9%) than male students (42.9%) who were unsure or didn't know how the salary compensation differed.

Analysis on a regional basis indicated that a higher percentage of students from rural areas (36.2%) than from urban areas (20.8%) believed that salaries are higher for those employed in the marine industry compared to the average salary of Newfoundlanders and Labradorians employed in other sectors. However, more students from urban centres (65.1%) than from rural areas (48.6%) were unsure or didn't know how the salary compensation differs. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

2.7 Knowledge of Marine Institute

Of the students who responded to the question of availability of programs at the Marine Institute, nearly 60% indicated a lack of awareness. Approximately, one-third (35.6%) believed that a diploma of technology and post-graduate diplomas (26.2%) were available through the Marine Institute. Table 21 provides a list of the types of programs available at the Marine Institute and the percentage of students who indicated each program.

TABLE 21

TYPES OF PROGRAMS AVAILABLE AT THE MARINE INSTITUTE

n= 1240

			Gender Distribution*	
Programs	**# of Students**	**% of Students**	**Male (%)**	**Female (%)**
Do not know	699	59.4 %	53.8	46.2
Diploma of technology	440	35.6 %	52.5	47.5
Post-graduate diplomas	323	26.2 %	50.5	49.5
Master's degree	317	25.7 %	50.5	49.5
Bachelor's degree	317	25.6 %	52.4	47.6
Short-term certificate	275	22.3 %	44.9	55.1
Note: Total percentage exceeds 100% due to multiple mentions by students.			*Gender breakdown provided by the Women's Policy Office	

The awareness of programs available at the Marine Institute was examined on the basis of gender and region. For the most part, 52.2% of males and 60.6% of females indicated that they didn't know/were unsure about the types of programs available. However, there was a difference between male students and female students on the perception of the type of programs available at the Marine Institute. More male students (38.3%) than female students (32.9%) were aware of the Diploma of Technology. In addition, 24.5% of male students compared to 20.0% of female students were aware of short-term certificates at the Marine Institute.

According to regional breakdown, there was a higher percentage of urban students aware of the Diploma of Technology (37.7% urban, 35.4% rural) and short-term certificates (24.5% urban, 22.1% rural) compared to their rural counterparts. Almost 60.0% of the students from urban areas and over half the students from rural areas did not know what types of programs are available at the Marine Institute. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

Students were asked to rank their perception from 1 to 5 on the reputations of a list of institutions. Memorial University of Newfoundland was ranked first by nearly 53.0% of the student respondents; the Marine Institute was the next highest ranked institution, by 17.0% of respondents. When the second rankings are evaluated, the Marine Institute was indicated most often, by 35.2% of respondents. Table 22 provides a breakdown of the results for the first and second rankings.

TABLE 22 PERCEPTION OF REPUTATION OF INSTITUTIONS		
28. Please rank your perception of the reputations of the following institutions, 1 being the institution with the best reputation, 2 being the next, 3 being the third, 4 being the forth, and 5 being the fifth.		
Institution	**1**	**2**
Memorial University	52.6 %	18.4 %
Marine Institute	17.0 %	35.2 %
College of the North Atlantic	14.8 %	27.3 %
Private college	1.7 %	2.9 %
Other public colleges	1.6 %	2.9 %

On the basis of gender (see gender distribution table below), of those students who ranked Memorial University as the top institution in terms of reputation, 61.1% were female and 38.9% were male. Significant variances were also noted for the Marine Institute (43.6% female; 56.4% male) and the College of the North Atlantic (28.8% female; 71.2% male). Interestingly, when evaluating the second ranked institutions, the distribution by gender was reversed. Specifically, for Memorial University more males than females ranked this institution second (42.4% female; 57.6% male; for the Marine Institute and the College of the North Atlantic, however, higher percentages were revealed by females for both institutions (53.0% female and 47.0% male for Marine Institute; 58.3% female and 41.7% male for CONA). These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, High School Cross Tabulations and Report Tables.**

Table 23: Gender Distribution

Institution	Ranked 1		Ranked 2	
	Male (%)	Female (%)	Male (%)	Female (%)
Memorial University	38.9	61.1	57.6	42.4
Marine Institute	56.4	43.6	47.0	53.0
College of the North Atlantic	71.2	28.8	41.7	58.3
Private Colleges	54.5	45.5	52.6	47.4
Other public colleges	38.1	61.9	50.0	50.0
Note: Gender breakdown provided by the Women's Policy Office				

3.0 CONTROL VERSUS NON-CONTROL SCHOOL ANALYSIS

At the commencement of the marine careers awareness and perception project, the Marine Careers Secretariat indicated that comparison between several control group school and non-control group schools would provide beneficial information. It was determined that control group schools were those located in regions of the province that encompass a greater knowledge of the marine industry. Four schools were chosen to function as a control group. These were St. James Regional High (Port Aux Basques), King Academy (Harbour Breton), Lewisporte Collegiate (Lewisporte), and John Burke Academy (Grand Bank).

Cross tabulations were run with the two groups of schools and questions contained in the sections: General knowledge of the marine industry, Marine careers, Educational and training requirements, Financial incentives/inducements, and Knowledge of the Marine Institute.

General Knowledge of the Marine Industry

Overall, 17.4% of the students in the control group schools indicated that they were interested in pursuing a marine career compared to 12.8% of students surveyed in non-control group schools. Likewise, a higher percentage of students in control group schools, 22.6%, suggested that they were more likely to choose a marine career compared to 17.6% of students in non-control group schools. Furthermore, 47.7% of students in the non-control group indicated they were unsure of their likelihood of choosing a marine career, compared to 42% of students in the control group schools.

Marine Careers

Very little variances were discovered between the two groups of schools for questions related to knowledge of shore-based versus at sea/on water marine careers. The most significant difference occurred for students who indicated they didn't know about shore-based marine careers; control group schools, 39.1% and non-control group schools, 34.9%. There was also little variance between the two groups of schools for working away from home for extended periods of time.

Educational and Training Requirements

In reference to the skills needed for a marine career, insignificant differences between student responses from control group and non-control group schools were revealed for the majority of listed skills. Slight variances were noted, however, for the skills of computer automation and leadership. Specifically, 71.8% of students from the control group schools identified 'computer automation and technology' as a necessary skills, as compared to 66.2% of students in non-control group schools. Conversely, 'leadership ability' was cited by 73.8% of students in non-control group schools compared to 68.4% of students in control group schools.

In terms of education, 22.7% of students in non-control group schools felt that 'public college' was the minimum level of education needed to enter the marine industry, compared to 14.6% of students in control group schools. On the other hand, 53.6% of students in control group schools indicated that 'high school graduation' was the minimum level of

education required to enter the marine industry in comparison to 48.8% of students in non-control group schools.

When asked about where the required marine skills could be obtained, the most significant difference was for the College of the North Atlantic, with 27.5% of students from control group schools citing this institution compared to 37.6% of students from non-control group schools. As well, Memorial University was cited by 37.4% of students from control group schools compared to 44.5% of students from non-control group schools. It is interesting to note that there is little difference between the responses between control group schools and non-control group schools for the Marine Institute (79.5% and 78.5%, respectively).

Financial Incentives/ Inducements

With respect to the comparison of salaries of those employed in the marine industry to the average salary of Newfoundlanders and Labradorians employed in other sectors, 40.9% of students in control group schools indicated they believe salaries to be higher in the marine industry compared to 32.9% of students in non-control group schools.

Knowledge of the Marine Institute

When the question was posed on the types of programs available at the Marine Institute, a number of variances are worth mentioning. Significantly, 'post-graduate programs' were cited by 20.5% of students from the control group schools, compared to 28.0% of students from non-control group schools. Similarly, 16.8% of students from the control group schools cited 'short-term certificate' compared to 24% of students from non-control group schools as an available program at the Marine Institute. Additionally, the 'diploma of technology' program was selected by 33.2% of students of control group schools compared to 36.4% of students from non-control group schools.

Conversely, students from control group schools more frequently mentioned 'bachelors degree' (26.8% control group; 25.2% non-control group) and 'masters degree' (28.3% control group, 24.8% non-control group) than students from non-control group schools.

Students were given the opportunity to rank their perception of the reputation of a list of institutions. Of the first ranked institutions, the most notable variance between control group schools and non-control group schools occurred with the College of the North Atlantic (18.5% and 16.5%, respectively) followed by Memorial University with 59.1% and 60.9%, respectively. When the second ranked institutions are considered, the most significant variance occurs for the Marine Institute, indicated by 47.3% of students from the control group schools and 38.6% of students from the non-control group schools.

4.0 SUMMARY ISSUES AND IMPLICATIONS

The following discussion of interview findings focuses on potential issues to be addressed by the Marine Careers Secretariat. Readers are cautioned not to interpret the discussion as an indication that students are negative about marine careers and about the marine industry in this province. On the contrary, interview findings demonstrate a very positive attitude toward the marine industry and indicate a desire to learn more about opportunities in marine careers. Nonetheless, this report provides an analysis of factors affecting personnel recruitment in the marine industry, as identified by the Marine Careers Secretariat. The issues are organized and presented according to the main sections of the interview.

Background Information

There were 18 schools and a total of 1291 high school students who participated in the survey. A profile of the students revealed an even division between male and female students. The majority of respondents intended to continue their education after completion of high school through a post-secondary institution. Memorial University of Newfoundland, the College of the North Atlantic, other universities and the Marine Institute were ranked as the institutions of choice of high school students. The Marine Institute was ranked first, second or third by over one-third of the students who are planning or considering attending a post-secondary institution. Of those students who are not planning to intend or are undecided as to continuing their education beyond high school, under half of these students are 'undecided as to their career path'. The Marine Careers Secretariat may wish to focus attention on the promotion of marine careers and the opportunities offered by marine related industries. In turn, the Marine Institute may wish to focus on enhancing its profile with, and capturing a larger number of, those students who already rate it highly.

Parents are the primary influencers of high school students in their decision to pursue a post-secondary education and/or career. In fact, parents were indicated as the strongest influence nearly five times as often as friends and more than 12 times as often as teachers.

In terms of where students seek information when attempting to make a career choice, respondents principally availed of the Internet and other people. Furthermore, nearly two-thirds of students had decided on a career they would like to pursue.

Marine Industry

Overall, high school students were not very familiar with many marine careers. Slightly over one-third of students were not familiar with or interested in any of the listed marine careers. The positions that were most familiar were in catering (cook/steward), administration (clerical/accounting) and engineering officer. Careers the students were interested in pursuing were engineering officer, design, and maintenance.

Slightly less than half of the students indicated that they, or someone they know, has been employed or connected with the marine industry. Furthermore, according to their knowledge and experience with the marine industry, students primarily were 'unsure' as to choosing a marine career.

Gender Issues

There was a perception among high school students that women are capable of performing the same tasks and activities as men in marine careers. In fact, the evaluation of gender factors with respect to the marine industry clearly indicated strong disagreements with the statements suggesting that women do not have the same opportunities and capabilities as men. Additionally, the statements relating to the equal opportunities of men and women in the marine industry indicated agreement by both male and female students.

Marine Careers

Knowledge of both shore-based careers and at-sea/on water marine careers was somewhat low by students who responded to the question of how much they knew about these marine careers. As previously mentioned, high school students were not familiar with many marine careers. It is evident that there is a need to promote career options in the marine industry.

Educational and Training Requirements

Students provided their opinions on educational and training requirements needed for working in the marine industry. Students indicated that teamwork, navigational skills and mechanical training were the most needed skills for a marine career. Furthermore, students believed that the minimum level of education required to enter into a marine career is graduation from high school.

In terms of perceptions regarding the best place to receive skills required for a marine career, not surprisingly, nearly 80% of students indicated the Marine Institute as one of the places to obtain an education for marine careers.

Financial Incentives/ Inducements

One half of the students didn't know or were unsure about how salaries in the marine industry compare to the average salary of Newfoundlanders and Labradorians in other sectors. The Secretariat may wish to consider some initiative(s) to promote the marine industry as a viable and prosperous industry.

Knowledge of Marine Institute

Most high school students were unaware of the programs available at the Marine Institute. Overall, the perception of the Marine Institute was positive; however, many students appeared to be uninformed about its programs and the opportunities available in the industry.

PERCEPTIONS OF CAREER OPPORTUNITIES IN THE MARINE INDUSTRY IN NEWFOUNDLAND AND LABRADOR

INFLUENCERS

Final Report

Submitted to:

MARINE CAREERS SECRETARIAT

Submitted by:

P. J. GARDINER INSTITUTE FOR ENTERPRISE AND ENTREPRENEURSHIP
FACULTY OF BUSINESS ADMINISTRATION
MEMORIAL UNIVERSITY

November 2004

Memorial
University of Newfoundland

P. J. Gardiner Institute

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FACULTY OF BUSINESS ADMINISTRATION
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RESULTS

The information and data gathered in the survey were analyzed using SPSS statistical software. Most of the analysis consisted of frequency distributions and cross-tabulations to determine commonality of responses and to investigate the impact of pre-existing knowledge and experience.

Ten influencer surveys were sent to each school in the study for a total of 180 surveys. The school representative randomly distributed ten influencer surveys to either a teacher, administrator or guidance counsellor. A pre-addressed envelope was included with the questionnaire to enable an effective and efficient way to increase the likelihood of influencers returning the questionnaire to the school contact identified. A total of 147 surveys were returned by influencers giving a response rate of 81.7%. Gender breakdown information was not obtained from the influencer survey.

1.0 BACKGROUND INFORMATION

The purpose of the first series of questions was to garner information on the profile of influencers such as their profession in the school, the level of interaction with high school students, and the level of influence they believe they have on the career choices of the students.

Teachers (82.3% of respondents) were the primary respondents in the influencer survey. An equal number (12) and percentage (8.2%) of guidance counsellors and administrators responded to the survey. Only 2.0% of respondents indicated they were in another profession in the school. Table 1 provides a summary of data collected regarding influencers' profession in school.

TABLE 1

INFLUENCERS' PROFESSION IN SCHOOL

Profession	# of Influencers	% of Influencers
Teacher	121	82.3%
Guidance Counsellor	12	8.2%
Administrator	12	8.2%
Other	3	2.0%
Total	148*	100.0%

* A respondent indicated being a teacher and an administrator.

In this report, "Influencers" will be used to refer to all professions listed above (i.e. the total of all respondents). In some instances, analysis is performed on the influencer groups where results revealed significant differences between each group.

When influencers' were asked the extent of their interaction with students, whether it was constant, occasional, often or rare, 98.6% of respondents indicated constant interaction meaning daily communication with the students. Slightly over 1.0% indicated 'often' referring to weekly interaction with the students. Furthermore, the influencers were given the opportunity to provide their opinion on how much influence they have on the career choices of the students. Approximately 40.0% of influencers felt they had a moderate amount of influence on the career choices of their students followed by 35.4% who felt they had a minor amount of influence. Only 8.2% believed they had significant influence on student career choices. Table 2 provides a summary of data.

TABLE 2

INFLUENCE OVER CAREER CHOICES OF STUDENTS

Influence	% of Influencers
I have a significant amount of influence.	8.2 %
I have a moderate amount of influence.	40.8 %
I have a minor amount of influence.	35.4 %
I have no influence.	2.0 %
I am unsure as to the amount of influence I have.	13.6 %

Data were collected as to what influencers thought students considered as positive factors in choosing a career. Predictably, all of the influencers indicated wages as an important criteria for students, followed by job stability (63.3%), prestige/status (57.1%), and full-time year round work (55.8%). Table 3 lists the criteria and the respective number and percentage of influencers indicating specific criteria they feel are important for students in making a career choice.

TABLE 3

POSITIVE FACTORS IN CHOOSING A CAREER

n=147

Factors	# of Influencers	% of Influencers
Wages	147	100.0
Job stability	93	63.3
Prestige/status	84	57.1
Year round full-time work	82	55.8
Leisure time	65	44.2
Variety and excitement	54	36.7
Benefits (health care, pension)	50	34.0
Live in own community	46	31.3
Opportunity to travel	44	29.9
Opportunity for promotion	42	28.6
High quality family life	34	23.1
Flexible work hours	31	21.1
Professional certification	25	17.0
Working outside	17	11.6
Working inside	12	8.2
Requires physical labour	11	7.5
Other	8	5.4

Note: Total percentage exceeds 100% due to multiple mentions by influencers.

Further analysis was conducted based on each influencer group. There were significant variances between groups for several of the listed factors. Table 4 provides a breakdown of those factors that revealed differences between influencer groups.

TABLE 4

POSITIVE FACTORS BY INFLUENCER GROUP

n=147

Factors	Guidance Counsellor	Teacher	Administrator
Full-time work	66.7%	56.2%	41.7%
Variety and excitement	33.3%	37.2%	16.7%
Working outside	0.0%	12.4%	16.7%
Physical labour	0.0%	7.4%	16.7%
High quality family life	8.3%	24.0%	33.3%
Flexible work hours	8.3%	24.0%	16.7%
Professional certification	16.7%	17.4%	8.3%
Working inside	8.3%	9.1%	16.7%

2.0 MARINE INDUSTRY

2.2 General

Influencers were given the opportunity to indicate if they were familiar with specific marine careers. Influencers seemed to be most aware of positions in catering (cook/steward) (70.1%), maintenance (55.1%) and administration (53.7%). Table 5 provides a summary of influencer responses regarding their familiarity with marine career choices.

TABLE 5

FAMILIARITY WITH MARINE CAREERS

n=147

Marine Careers	# of Influencers	% of Influencers
Catering personnel (cook/steward)	103	70.1 %
Maintenance personnel	81	55.1 %
Administrative personnel	79	53.7 %
Engineering officer	77	52.4 %
Deck hand/engineering assistant	76	51.7 %
Design personnel	74	50.3 %
Communications personnel	58	39.5 %
Deck officer	54	36.7 %
None of the above	11	7.5%

Note: Total percentage exceeds 100% due to multiple mentions by influencers.

Further analysis revealed that guidance counsellors were more familiar with the listed marine careers than teachers and administrators. For instance, one-half of teachers and two thirds of administrators were familiar with marine careers in design and engineering officer whereas all of the guidance counsellors were aware of these careers. Similarly, results were revealed for deck hand/engineering assistant. One-half of teachers and two-thirds of administrators were familiar with this career compared to 92.0% of guidance counsellors.

Seventy-four percent of influencers identified that they, or someone they know, has been employed in, or connected with, the marine industry. Of those who said yes to being involved in, or knowing someone in, the marine industry, 83.0% indicated they found the work to be enjoyable, which translates to 83 respondents.

Of the 83.0% who indicated knowledge of, and experience with, the marine industry, 69.7% were more likely to recommend a career in the marine industry to students. Only 4.8% were less likely to recommend a marine career to students while 25.5% were unsure. Further analysis based on influencer groups revealed that a higher percentage of administrators and guidance counsellors than teachers were more likely to recommend a marine career.

Subsequent to gathering information based on the respondents' knowledge and experience with the marine industry, influencers were asked whether they recommend pursuing marine careers to students. Results indicated that 87.4% of influencers recommend pursuing marine careers to students. Further analysis revealed that based on their knowledge and experience

with the marine industry, influencers who were more likely to recommend marine careers to students, 97.0% (98 of 101 respondents) actually do recommend pursuing marine careers to students. Of those respondents, who indicated they were unsure as to recommending marine careers to students, based on their knowledge and experience with the marine industry, 71.4% (25 of 35 respondents) actually do recommend marine careers to students.

The main circumstance identified that would prevent an influencer from recommending marine careers to students was the lack of information, indicated by 54.7% of respondents. When influencers were asked whether they believe they have adequate access to information about the marine industry to give career related advice, two-thirds of respondents revealed they *do not* have adequate access to marine career information.

One-third of influencers who indicated they *do* have adequate access to information about the marine industry to give career related advice, indicated that they received most of the information from the guidance counsellor department/office. Other sources indicated included the internet, friends, colleagues and former students. A list of other responses can be found in Appendix II of the supplementary document: **Appendices of the Public Perception Survey.**

Several recommendations were provided by influencers on how to improve access to information about the marine industry. School visitations either by guest speakers, Marine Institute representatives or individuals well informed about the marine industry were the most often cited recommendations. Similarly, presentations, information sessions, sending information packages and providing materials to the schools were frequently suggested (see Table 6). A list of the responses can be found in Appendix II of the supplementary document: **Appendices of the Public Perception Survey.**

TABLE 6

RECOMMENDATIONS TO IMPROVE ACCESS TO INFORMATION ABOUT THE MARINE INDUSTRY

Recommendations	# of Mentions*
School Visitations by Guest Speakers, Marine Institute Representatives	27
Presentations/Information Sessions	17
Sending Information Packages/Mail-outs	15
Career Days/Trade Shows	10
Website/online information	9
Advertisements/media coverage	8
Guidance Counsellor Office	7
Posters/brochures	5
Video/Multimedia information on the Marine Institute	3
Incorporate into curriculum	1
Host a major school event like Skills Canada, science fair, business or district showcase	1

*Note: Respondents may have listed more than one recommendation.

Influencers were given the opportunity to indicate their opinion on what factors would encourage students to pursue a marine career. Salary expectations (82.3%), support of others (79.6%), availability of jobs (79.6%) and personal interest (77.6%) were the primary criteria cited by influencers. Table 7 lists the criteria and the respective number and percentage of influencers indicating specific criteria they believed were important for students in making a career choice.

TABLE 7

FACTORS THAT ENCOURAGE STUDENTS TO PURSUE A MARINE CAREER

n= 147

Reasons	# of Influencers	% of Influencers
Salary expectations	121	82.3 %
Support of others	117	79.6 %
Availability of jobs	117	79.6 %
Personal interest	114	77.6 %
Career reputation	111	75.5 %
Training/educational requirements	87	59.2 %
Knowledge about marine careers	87	59.2 %
Working at sea/on the water	68	46.3 %
Family expectations	66	44.9 %
Cost of education	61	41.5 %
Relocation possibilities	59	40.1 %
Health or other personal reasons	39	26.5 %
Other	4	2.7 %

Note: Total percentage exceeds 100% due to multiple mentions by influencers.

Further analysis was conducted based on influencer groups. The following table reveals differences among administrators, teachers and guidance counsellors for factors they believed would encourage students to pursue a marine career.

TABLE 8

FACTORS BY INFLUENCER GROUP

n=147

Factors	Guidance Counsellor	Teacher	Administrator
Training/educational requirements	90.9%	69.1%	90.0%
Cost of education	75.0%	42.9%	54.5%
Family expectations	40.0%	60.9%	75.0%
Relocation possibilities	36.4%	55.9%	22.2%
Health or other personal reasons	18.2%	36.5%	55.6%

2.2 Perceptions

This section of the questionnaire was intended to gauge the perceptions of influencers with respect to a career in the marine industry. A list of statements was provided to allow the influencers to rate whether they disagreed or agreed with each of the statements. Statements indicating a positive or negative perception of the marine industry were explored. The data are presented through an indication of the mean or average response to each statement. A mean value of less than 3 indicates a primarily negative perception of the statement; a mean value of greater than 3 indicates a primarily positive perception of the statement. In some cases, however, the mean is not the best indicator of responses, especially if a small number of responses are at the extreme ends of the scale (i.e. 1 or 5 in this case). Therefore, in these instances, the median and/or the mode have also been used for analytical purposes. The median indicates the middle point – one half of the responses were below it and one half were above it. The mode identifies the most frequently cited response(s). Unlike the mean, the mode is not affected by extreme responses. All three of these analytical measures are utilized to examine the data indicated in Tables 9 and 10.

The following eight statements were notable positive considerations regarding perceptions of careers in the marine industry (mean ratings of 3.5 or greater):

- opportunities for professional certification;
- high salaries and benefits;
- variety and excitement;
- good opportunities for promotion;
- marine careers offer full-time year-round work;
- marine careers require overtime work;
- marine careers are physically demanding; and,
- marine careers require going to sea.

It is worth noting that these same statements had a median of 4.0 signifying that one-half of the respondents agreed or strongly agreed with these statements. Additionally, for these same statements a mode of 4.0 was revealed, indicating the majority of influencers agreed with these statements. Table 9 illustrates the mean scores for each of these statements. Charts 1 through 8 visually depict the frequency of responses of the aforementioned statements.

TABLE 9

FACTORS WITH RESPECT TO THE MARINE INDUSTRY (MEAN SCORES)

16. On a scale of 1 to 5, where 1 indicates "Strongly Disagree" and 5 indicates "Strongly Agree," please rate the following factors with respect to a career in the marine industry.

	1	2	3	4	5	MEAN SCORE
There are opportunities for professional certification				▲		4.0
There are high salaries and benefits				▲		3.9
There is variety and excitement				▲		3.7
There are good opportunities for promotion				▲		3.7
Marine careers offer full time year round work				▲		3.7
Marine careers require overtime work				▲		3.6
Marine careers are physically demanding				▲		3.5
Marine careers require going to sea				▲		3.5
Marine careers are prestigious				▲		3.4
Education and training is expensive				▲		3.2
Jobs are readily available				▲		3.2
Marine careers often require working in isolated environments			▲			3.1
There are good hours of work			▲			3.0
Education for marine careers is long and challenging			▲			3.0
There are flexible work hours			▲			3.0
Marine careers provide extended time at home			▲			3.0
Marine careers offer mostly seasonal employment			▲			2.8
Little education and training is required		▲				2.1

CHART 1: PROFESSIONAL CERTIFICATION

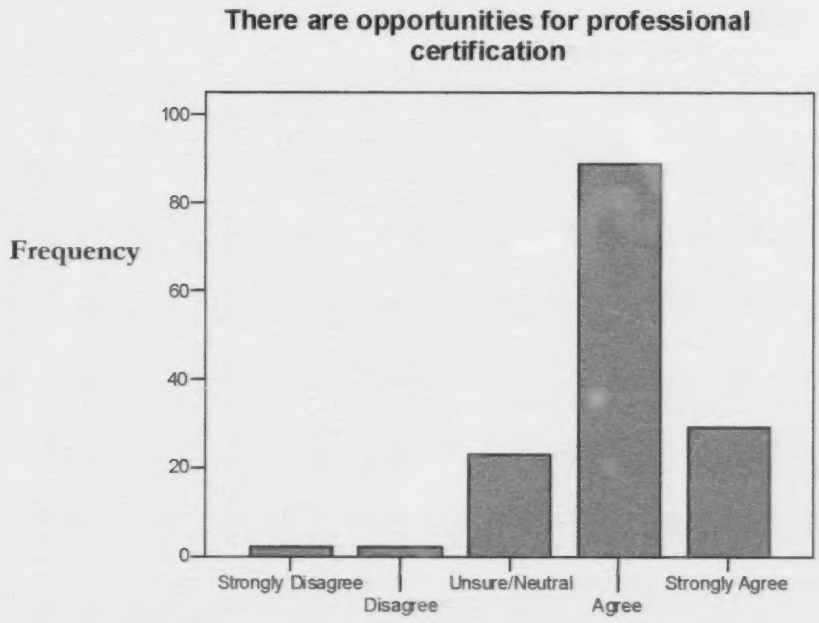


CHART 2: HIGH SALARIES AND BENEFITS

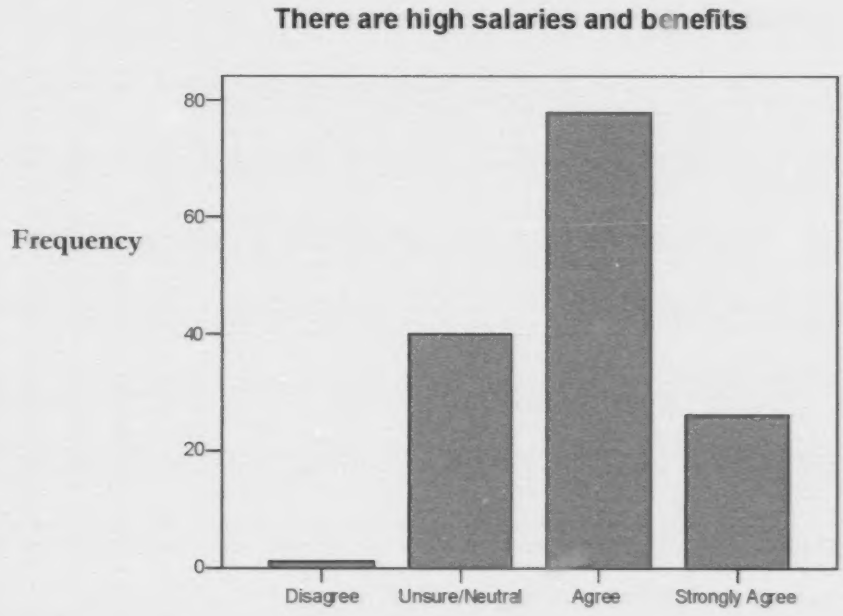


CHART 3: VARIETY AND EXCITEMENT

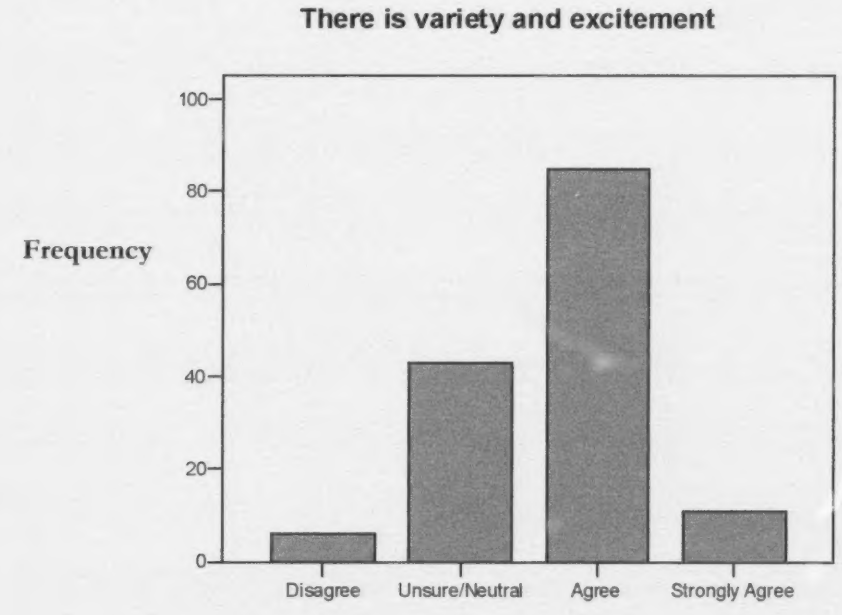


CHART 4: OPPORTUNITIES FOR PROMOTION

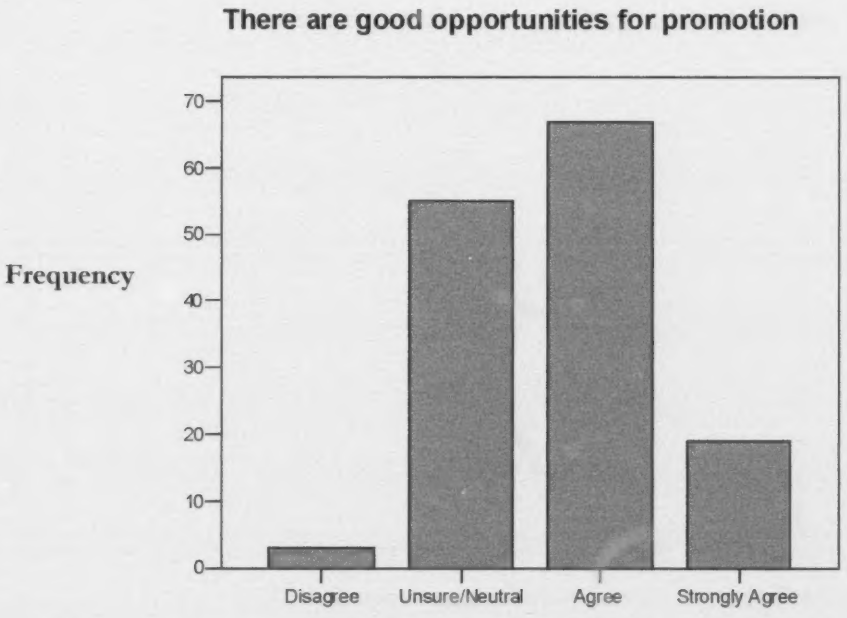


CHART 5: FULL-TIME YEAR ROUND WORK

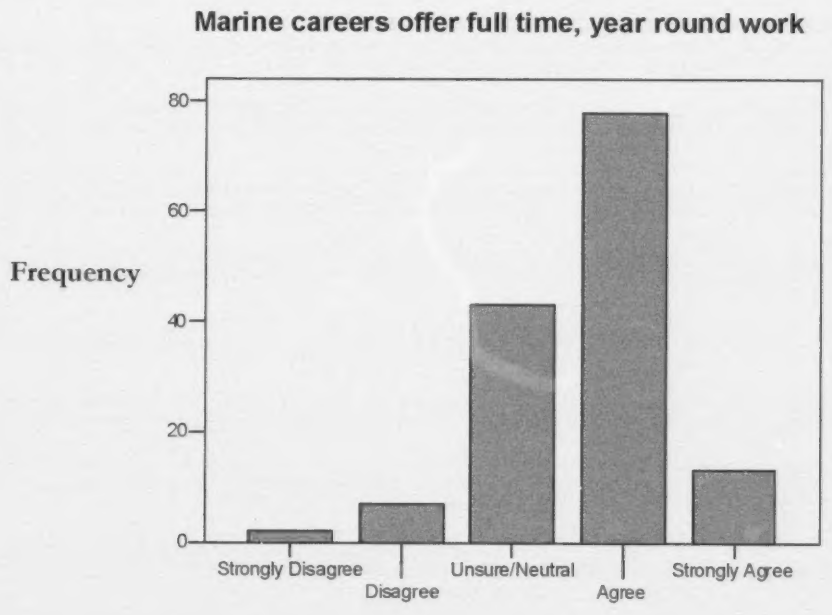


CHART 6: MARINE CAREERS REQUIRE OVERTIME

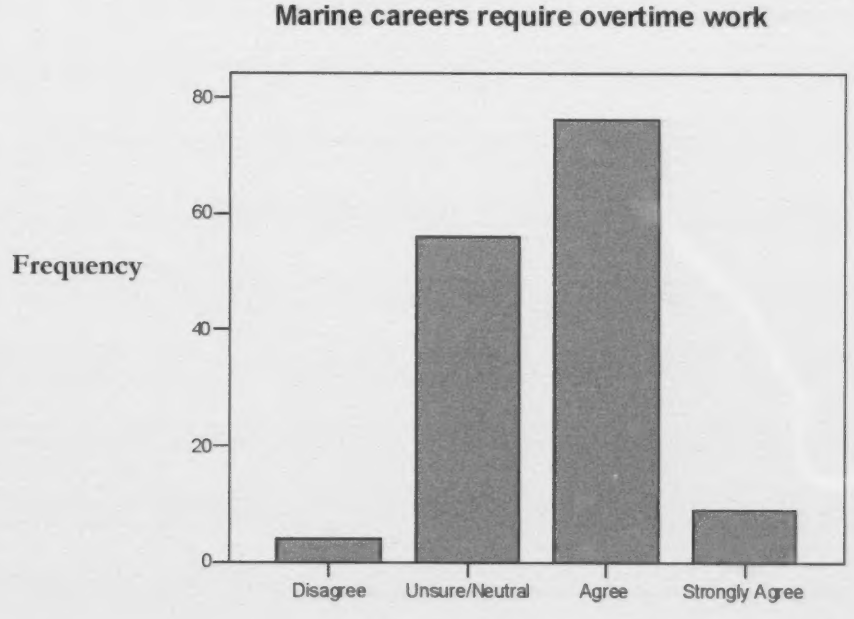


CHART 7: MARINE CAREERS PHYSICALLY DEMANDING

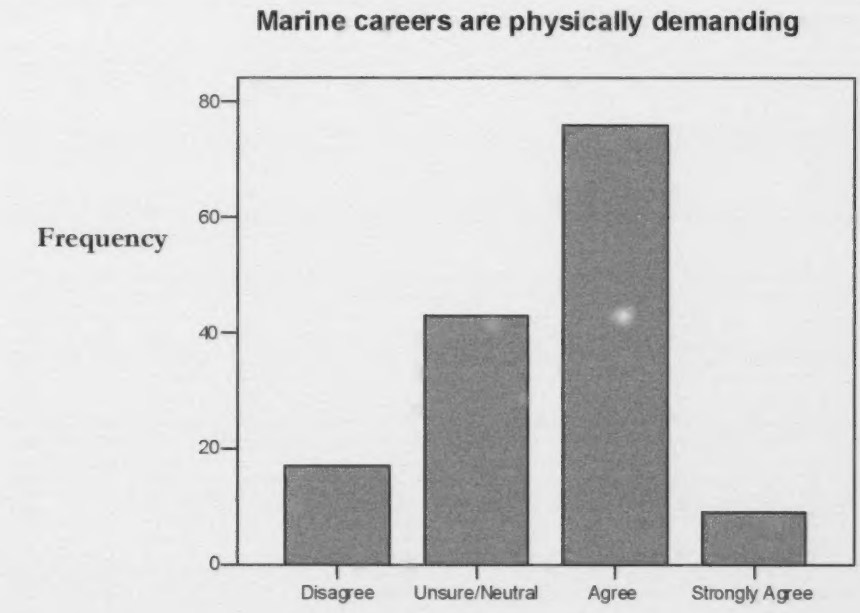
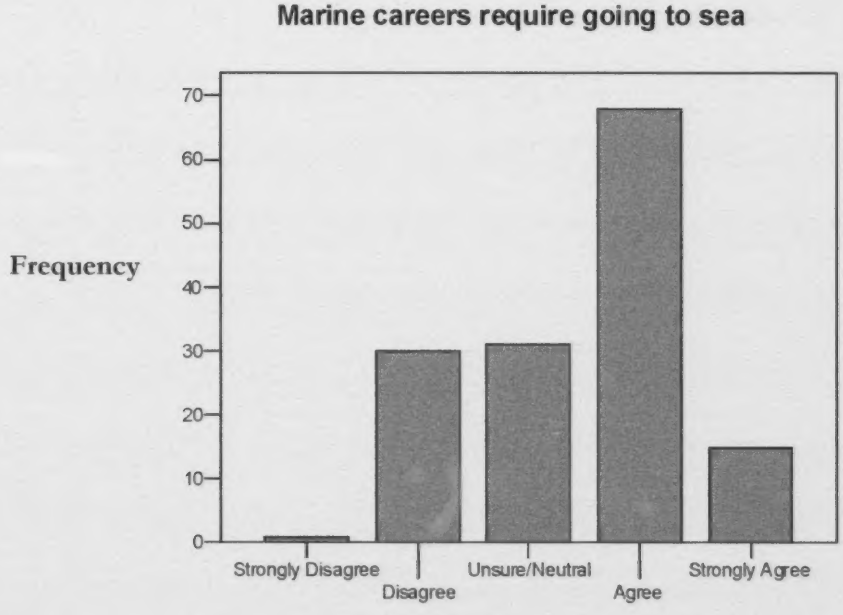


CHART 8: MARINE CAREERS REQUIRE GOING TO SEA



The statement "Little education and training is required" should be noted because of its mean rating of 2.1/5. This indicates that most respondents disagreed with this statement and it was given less credence. Chart 9 depicts the frequency of responses for this statement.

CHART 9: LITTLE EDUCATION AND TRAINING

2.3 Gender Issues

Statements indicating a positive or negative perception of the marine industry based on gender were also investigated. "The marine industry is male dominated" (3.8) and "Women can work anywhere in the marine industry" (3.7) were two of the notable factors relating to the perception of gender equality in marine careers (mean ratings of 3.5 or greater). It is also worth noting that these same statements and the statement "There are equal opportunities for men and women in the marine industry" each had a median and mode of 4.0. That is, one half of the respondents indicated they agreed or strongly agreed with these statements and the most cited response was that they agreed.

The following eight statements were noteworthy as perceptions given less credence (mean ratings of 2.0 or less):

- women cannot get jobs in the marine industry;
- marine industry careers are unsuited for women;
- women are not physically strong enough to work in marine careers;
- women could not be the captain of a ship; and,
- women in the marine industry can only work in shore-based, office & administrative jobs.

The first three statements mentioned above each have a median of 2.0 and a mode of 2.0. This signifies that one half of the respondents indicated they disagreed or strongly disagreed with these statements and the most cited response was that they disagreed. The last two statements however, had a median of 2.0 but a mode of 1.0. This suggests that the most cited response is that they strongly disagreed with these statements. Table 10 illustrates the mean scores for each of these statements. Charts 10 through 19 visually depict the frequency of responses of the statements with a mean rating of 3.5 or greater and those statements with a mean rating of 2.5 or lower.

TABLE 10

FACTORS WITH RESPECT TO THE MARINE INDUSTRY (GENDER)
(MEAN SCORES)

17. On a scale of 1 to 5, where 1 indicates "Strongly Disagree" and 5 indicates "Strongly Agree," please rate the following factors with respect to a career in the marine industry.

	1	2	3	4	5	MEAN SCORE
The marine industry is male dominated				▲		3.8
Women can work anywhere in the marine industry				▲		3.7
There are equal opportunities for men and women in the marine industry			▲			3.4
Women and men are treated as equals in marine careers			▲			3.1
Marine industry careers are intimidating for women			▲			3.0
Women face harassment working the marine industry			▲			2.9
Ships are not built to properly accommodate women		▲				2.5
Having men and women on a vessel as a crew can cause problems		▲				2.2
Women do not want to be at sea because they need to be close to home		▲				2.1
Women cannot get jobs in the marine industry		▲				2.0
Marine industry careers are unsuited for women		▲				2.0
Women are not physically strong enough to work in marine careers		▲				1.9
A woman could not be the captain of a ship	▲					1.7
Women in the marine industry can only work in shore-based, office & administrative jobs	▲					1.7

CHART 10: SHIPS NOT BUILT PROPERLY TO ACCOMMODATE WOMEN

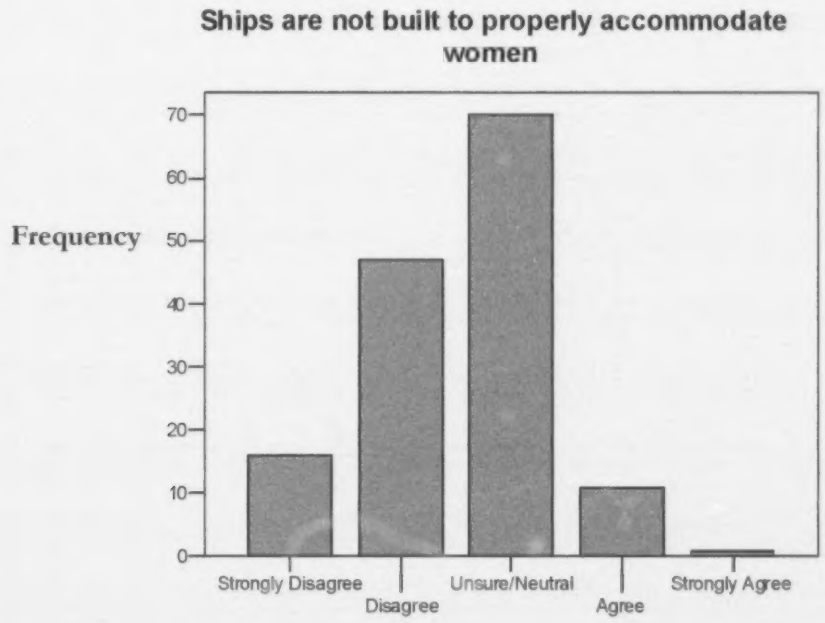


CHART 11: MEN AND WOMEN ON A VESSEL AS CREW CAUSE PROBLEMS

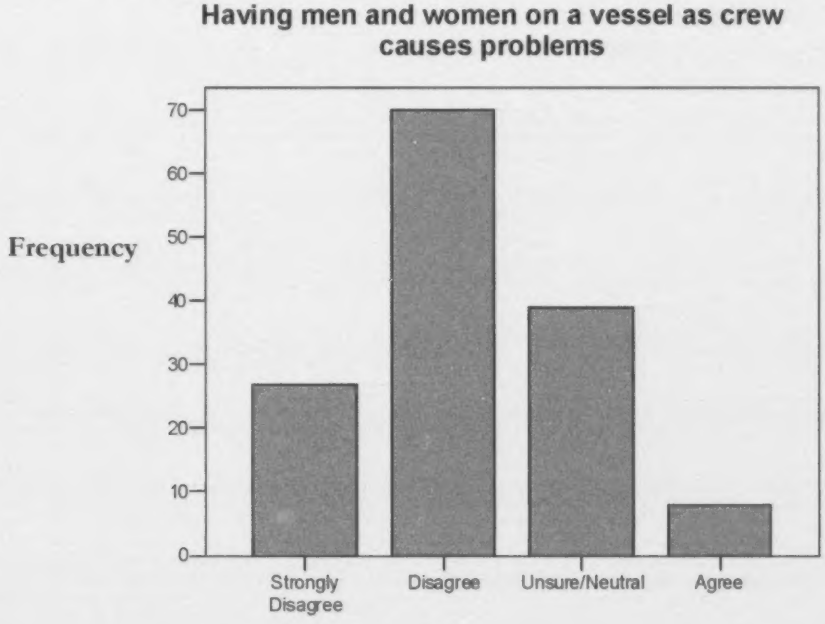


CHART 12: WOMEN DO NOT WANT TO BE AT SEA, WANT TO BE CLOSE TO HOME

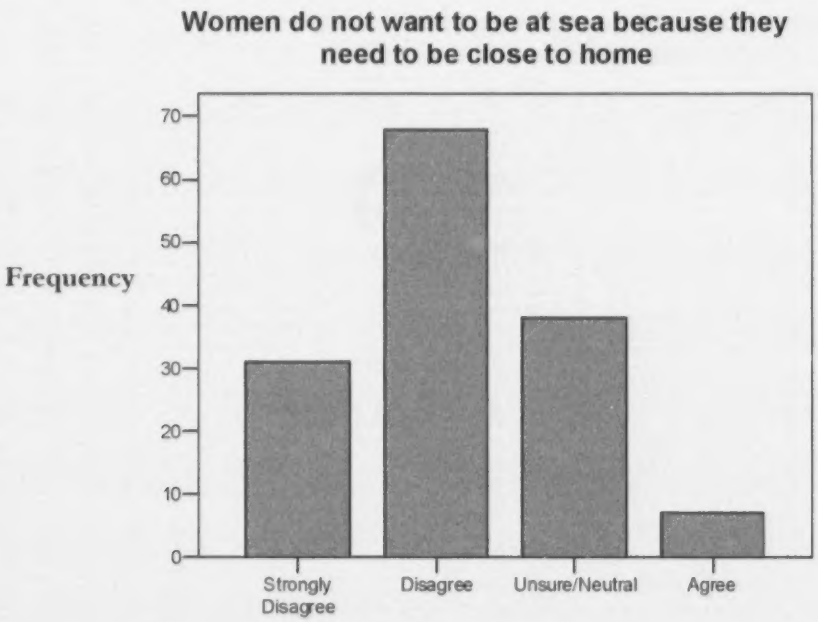


CHART 13: MARINE INDUSTRY IS MALE DOMINATED

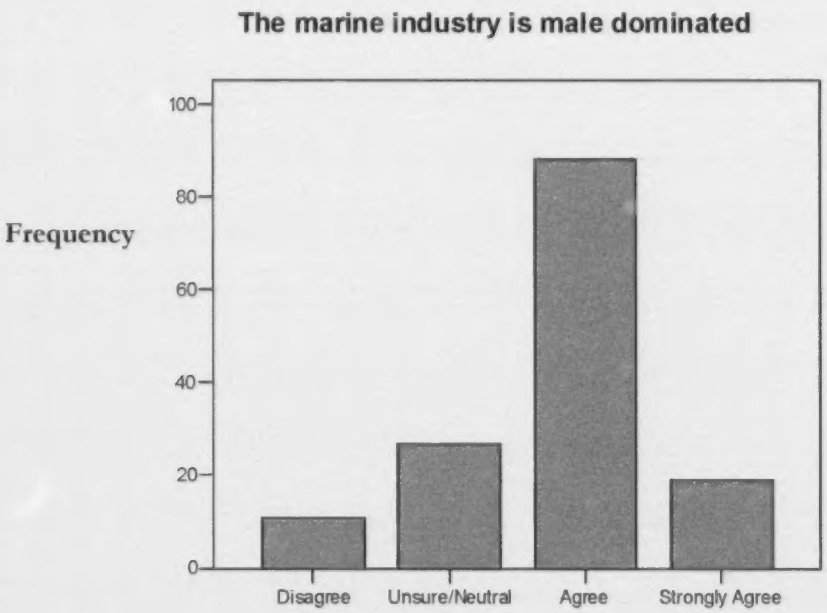


CHART 14: WOMEN CAN WORK ANYWHERE IN THE MARINE INDUSTRY

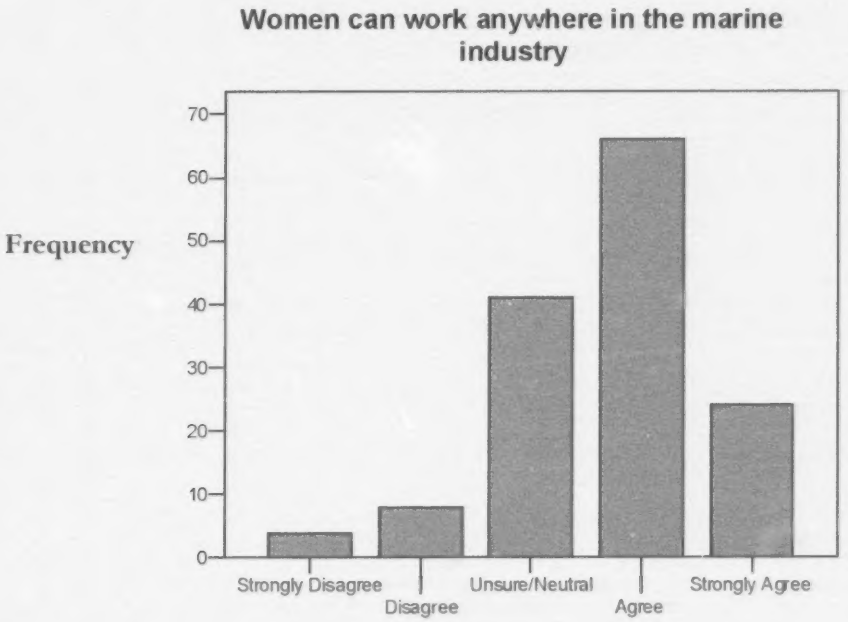


CHART 15: WOMEN CANNOT GET JOBS IN MARINE INDUSTRY

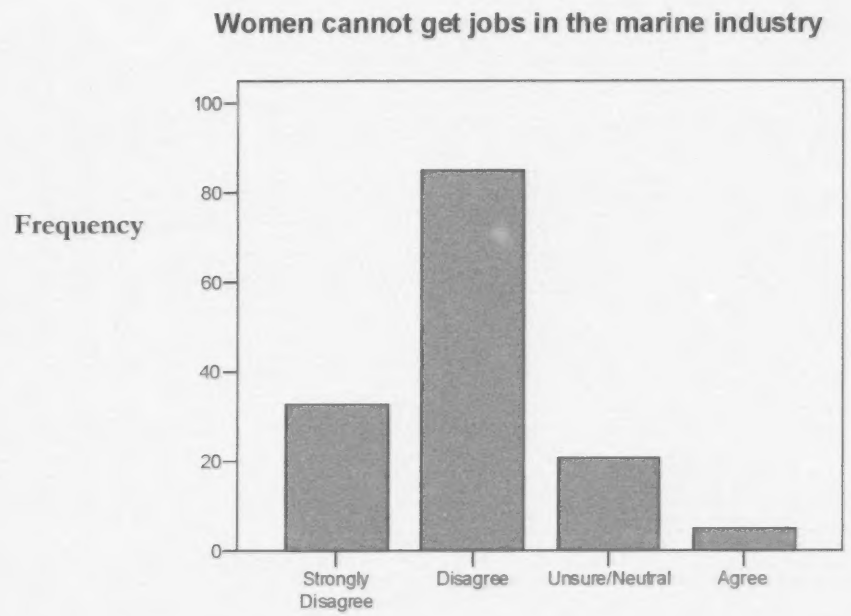


CHART 16: MARINE INDUSTRY CAREERS UNSUITED FOR WOMEN

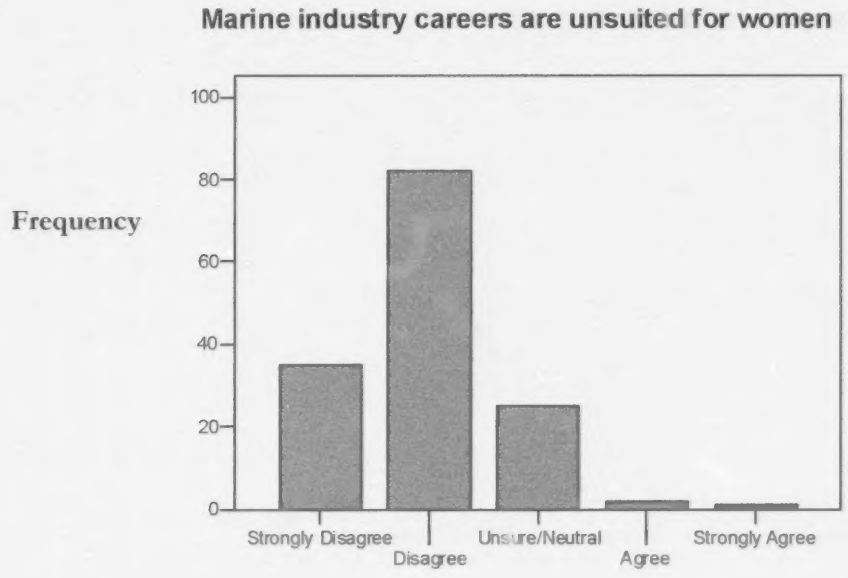


CHART 17: WOMEN ARE NOT PHYSCIALLY STRONG ENOUGH

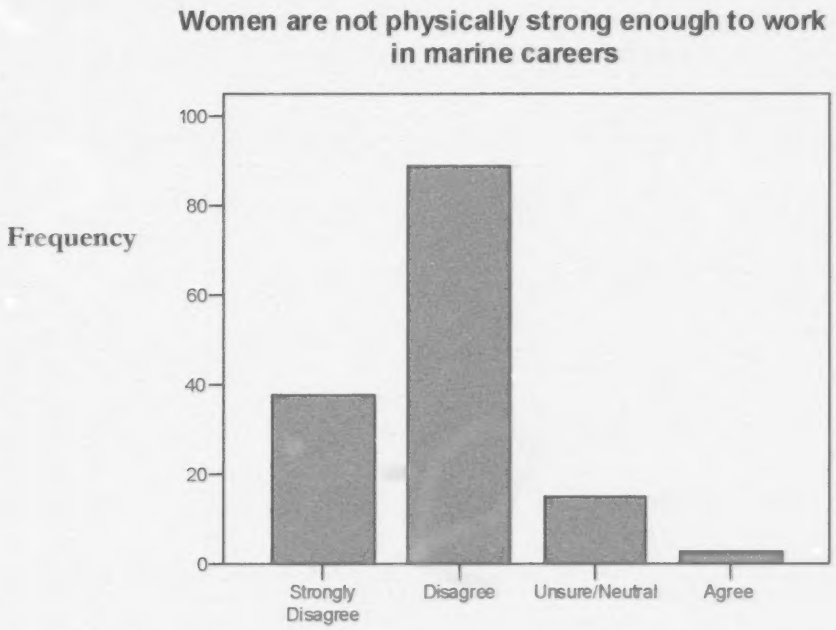


CHART 18: CAPTAIN OF A SHIP

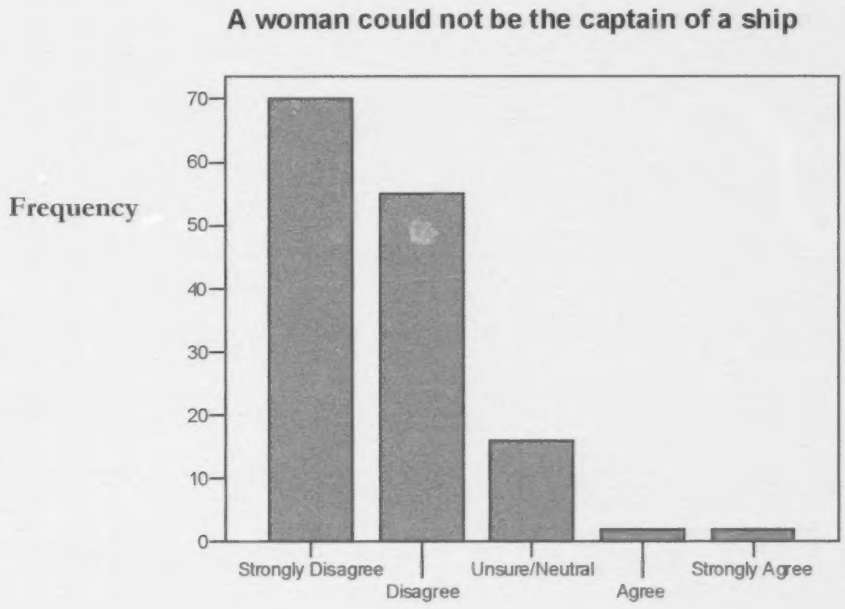
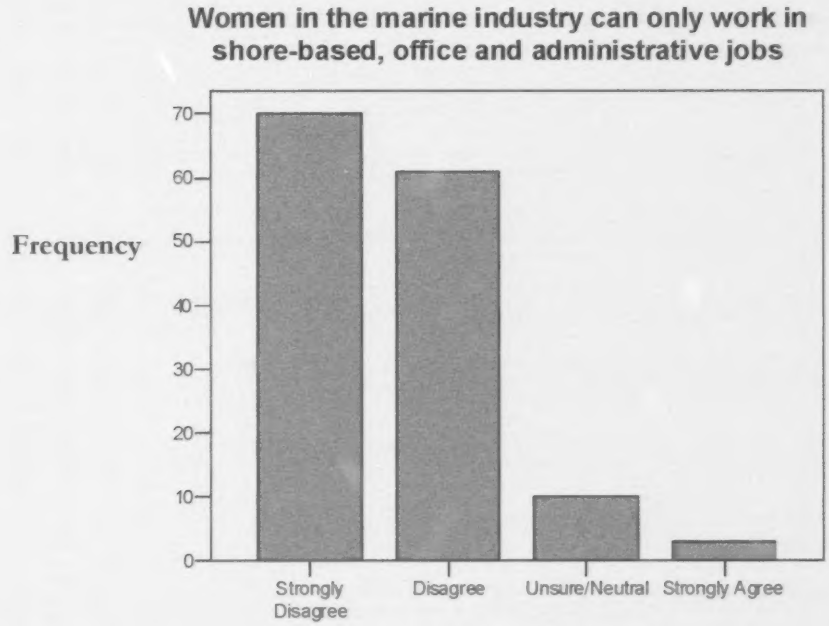


CHART 19: ONLY WORK IN SHORE-BASED, OFFICE & ADMINISTRATION



2.4 *Marine Careers*

Influencers were asked to rate how much they knew about shore-based versus at-sea/on water marine careers. A five-point scale, with 1 indicating "Very Little" and 5 indicating "Very Much," was used. As indicated in Table 11, 61.0% of influencers who responded to this question rated their knowledge of shore based careers at 2 or lower, compared to 8.2% of influencers who rated their knowledge of shore based careers at 4 or higher.

TABLE 11

KNOWLEDGE OF SHORE BASED MARINE CAREERS

n= 146

Rating	# of Influencers	% of Influencers
1 out of 5	51	34.7 %
2 out of 5	39	26.5 %
3 out of 5	31	21.1 %
4 out of 5	12	8.2 %
5 out of 5	0	0.0 %
Don't Know	13	8.8 %
Total	146	100.0%

With regard to respondents' knowledge of at-sea/on water careers, 41.5% of influencers rated their knowledge at 2 or lower, meaning they indicated having very little or little knowledge of at-sea/on water careers. Alternatively, 20.4% of influencers rated their knowledge at 4 or higher, signifying they knew very much or much about at-sea/on water careers. Table 12 provides a breakdown of the influencers' responses.

TABLE 12

KNOWLEDGE OF AT-SEA/ON WATER MARINE CAREERS

n=146

Rating	# of Influencers	% of Influencers
1 out of 5	37	25.2 %
2 out of 5	24	16.3 %
3 out of 5	44	29.9 %
4 out of 5	29	19.7 %
5 out of 5	1	0.7 %
Don't know	11	7.5 %
Total	146	100.0%

2.5 *Educational and Training Requirements*

In this section, influencers were asked about their opinions on educational and training requirements needed for students to enter a career in the marine industry. Communication (95.8%), teamwork (95.1%), computer automation (90.1%) and interpersonal skills (90.1%), were the most cited skills influencers believed students need for a marine career. The following table provides a summary of influencer rankings of a list of skills provided in the survey.

TABLE 13

SKILLS NEEDED FOR A MARINE CAREER

n=147

Skills	# of Influencers	% of Influencers
Communication	136	95.8 %
Teamwork	135	95.1 %
Computer automation	128	90.1 %
Interpersonal skills	128	90.1 %
Navigational skills	120	84.5 %
Leadership	119	83.8 %
Planning/organizing	116	81.7 %
Mechanical training	113	79.6 %
Management skills	100	70.4 %
Blueprint reading	83	58.5 %
Other	7	4.9 %

Note: Total percentage exceeds 100% due to multiple mentions by influencers.

The only significant variance among influencer groups was with regard to management skills. Slightly over one-half of guidance counsellors, one-third of teachers and 83.3% of administrators believed students require this skill. For the remaining skills, there were no significant variances.

In terms of perceptions regarding the best place for students to receive skills required for a marine career, influencers provided the data presented in Table 14. Not surprisingly, almost all (97.3%) influencers indicated the Marine Institute as a place to obtain an education for marine careers.

TABLE 14 WHERE TO OBTAIN SKILLS FOR A MARINE CAREER n=146		
Location	**# of Influencers**	**% of Influencers**
Marine Institute	142	97.3 %
Memorial University	101	69.2 %
College of the North Atlantic	97	66.4 %
On-the-job	86	58.9 %
Other universities	64	43.8 %
Other public colleges	23	15.8 %
Private colleges	22	15.1 %
Don't know	6	4.1 %
Other	4	2.7 %
Note: Total percentage exceeds 100% due to multiple mentions by influencers.		

Furthermore, an overwhelming 97.2% of influencers felt that students would not need to leave the province in order to obtain training required for a marine career.

Overall, influencers believed that the minimum level of education required to enter a marine career is graduation from high school (65.7%). The following table provides an overview of the perceived minimum levels of education for a marine career.

TABLE 15 MINIMUM LEVEL OF EDUCATION REQUIRED n=143		
Education Level	**# of Influencers**	**% of Influencers**
High school graduate	94	65.7 %
Public college	24	16.8 %
Completed Grade 9 or less	9	6.3 %
Some high school	7	4.9 %
Bachelor's degree	4	2.8 %
Private college certificate/ diploma	4	2.8 %
Other	1	0.7 %
Masters or higher	0	0.0 %
Total	143	100.0%

The data were further reviewed according to influencer group. A significant variance was noted for the education level of "completion of grade 9 or less." Twenty-seven percent of guidance counsellors indicated this as the minimum level of education required, compared to 5.1% of teachers and 0.0% of administrators. As well, 18.6% of teachers indicated public college as a minimum level of education required, compared to 8.3% of administrators and 0.0% of guidance counsellors.

2.6 *Financial Incentives/Inducements*

Of the influencers who responded to the question on how salaries in the marine industry compare to the average salary of Newfoundlanders and Labradorians employed in other sectors, over one-half felt the salaries are higher in the marine industry. Only one respondent believed that marine industry salaries are lower. Table 16 provides an overview of influencer perceptions of salary comparisons between the marine industry and other sectors in the province.

TABLE 16

SALARY COMPARISON

n= 144

Salary Comparison	# of Influencers	% of Influencers
Salaries are higher	78	54.2 %
Do not know/unsure	43	29.8 %
Salaries are the same	22	15.3 %
Salaries are lower	1	0.7 %
Total	144	100.0 %

A high percentage (91.7%) of guidance counsellors, compared to one-half of teachers and one-half of administrators, believed that salaries are higher for those employed in the marine industry compared to the average salary of Newfoundlanders and Labradorians employed in other sectors. A higher percentage of teachers (32.5%) than administrators (25.0%) and guidance counsellors (8.3%) were unsure or didn't know how the salary compensation differed.

2.7 *Knowledge of Marine Institute*

A significant percentage of influencers (76.0%) believed that a Diploma of Technology was available through the Marine Institute. As well, slightly over two-thirds of influencers believed short-term certificates were available at the Marine Institute. Table 17 provides a list of the types of programs available at the Marine Institute and the percentage of influencers who indicated each.

TABLE 17 TYPES OF PROGRAMS AVAILABLE AT THE MARINE INSTITUTE n= 147		
Programs	**# of Influencers**	**% of Influencers**
Diploma of technology	111	76.0 %
Short-term certificate	98	67.1 %
Post-graduate diplomas	72	49.3 %
Bachelor's degree	65	44.5 %
Master's degree	34	23.3 %
Do not know	26	17.8 %
Note: Total percentage exceeds 100% due to multiple mentions by influencers.		

Perhaps not surprisingly, guidance counsellors were more familiar than teachers and administrators with the types of programs at the Marine Institute. Guidance counsellors indicated a greater awareness of short-term certificates, Diploma of Technology, Bachelor's degree and post-graduate diplomas than did teachers and administrators.

Influencers were asked to rank from 1 to 5 their perception on the reputations of a list of institutions. Memorial University of Newfoundland was ranked first by 65.3% of the influencers and the Marine Institute was the next highest ranked institution (23.1% of influencers). The Marine Institute was indicated most often as the second most prestigious institution (57.1% of influencers). Table 18 provides a breakdown of the results for the first and second rankings.

TABLE 18 PERCEPTION OF REPUTATION OF INSTITUTIONS		
28. Please rank your perception of the reputations of the following institutions, 1 being the institution with the best reputation, 2 being the next, 3 being the third, 4 being the forth, and 5 being the fifth.		
Institution	**1**	**2**
Memorial University	65.3 %	20.4 %
Marine Institute	23.1 %	57.1 %
College of the North Atlantic	2.7 %	13.6 %
Other public colleges	0.7 %	0.0 %
Private college	0.0 %	0.0 %

3.0 SUMMARY ISSUES AND IMPLICATIONS

The following review of interview findings focuses on potential issues to be addressed by the Marine Careers Secretariat. The issues are organized and presented according to the main sections of the questionnaire.

Background Information

A total of 147 surveys were returned by influencers giving a response rate of 81.7%. Teachers were the primary respondent to the survey. Most of the influencers have constant interaction with the students and they believe they have a moderate amount of influence on the career choices of their students.

All of the influencers indicated wages as an important criteria for students, followed by job stability, prestige/status, and full-time year round work.

Marine Industry

Influencers seemed to be most aware of positions in catering (cook/steward), maintenance and administration. Guidance counsellors were more familiar with the listed marine careers than teachers and administrators. Three-quarters of influencers identified that they, or someone they know, has been employed in, or connected with, the marine industry.

A higher percentage of administrators and guidance counsellors than teachers were more likely to recommend a marine career. The main circumstance identified that would prevent an influencer from recommending marine careers to students was the lack of information. One-third of influencers who indicated they *do* have adequate access to information about the marine industry to give career related advice, indicated that they received most of the information from the guidance counsellor department/office. Other sources indicated included the internet, friends, colleagues and former students.

School visitations either by guest speakers, Marine Institute representatives or individuals well informed about the marine industry were the most often cited recommendations by influencers on how to improve access to information about the marine industry.

Salary expectations, support of others, availability of jobs and personal interest were the primary criteria cited by influencers on factors that would encourage students to pursue a marine career.

Perceptions

The following eight statements were notable positive considerations regarding perceptions of careers in the marine industry (mean ratings of 3.5 or greater):

- opportunities for professional certification;
- high salaries and benefits;
- variety and excitement;
- good opportunities for promotion;
- marine careers offer full-time year-round work;
- marine careers require overtime work;
- marine careers are physically demanding; and,

- marine careers require going to sea.

Gender Issues

There was a perception among influencers that women are capable of performing the same tasks and activities as men in marine careers. The evaluation of gender factors with respect to the marine industry indicates disagreement with the statements suggesting that women do not have the same opportunities and capabilities as men.

Marine Careers

Knowledge of both shore-based careers and at-sea/on water marine careers was somewhat low by influencers who responded to the question of how much they knew about these marine careers.

Educational and Training Requirements

Overall, influencers believed that the minimum level of education required to enter a marine career is graduation from high school. In terms of perceptions regarding the best place to receive skills required for a marine career, almost all influencers indicated the Marine Institute as one of the places to obtain an education for marine careers. Communication, teamwork, computer automation and interpersonal skills were the most cited skills influencers believed students need for a marine career.

Furthermore, almost all of influencers felt that students would not need to leave the province in order to obtain training required for a marine career.

Financial Incentives/ Inducements

Slightly over one-half of influencers felt that salaries are higher in the marine industry compared to the average salary of Newfoundlanders and Labradorians employed in other sectors.

Knowledge of Marine Institute

Guidance counsellors were more familiar than teachers and administrators with the types of programs at the Marine Institute. Guidance counsellors indicated a greater awareness of a short-term certificate, diploma of technology, bachelor's degree and post-graduate diplomas than did teachers and administrators.

Overall, the perception of the Marine Institute was positive as it was ranked second as the most reputable institution after Memorial University.

PERCEPTIONS OF CAREER OPPORTUNITIES IN THE MARINE INDUSTRY IN NEWFOUNDLAND AND LABRADOR

PARENTS

Final Report

Submitted to:

MARINE CAREERS SECRETARIAT

Submitted by:

P. J. GARDINER INSTITUTE FOR ENTERPRISE AND ENTREPRENEURSHIP
FACULTY OF BUSINESS ADMINISTRATION
MEMORIAL UNIVERSITY

November 2004

Memorial
University of Newfoundland

P. J. Gardiner Institute

Perceptions of Career Opportunities in the Marine Industry in Newfoundland and Labrador

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DIAGRAMS

Diagram 1: Map of Locations Surveyed

RESULTS

The information and data gathered in the survey were analyzed using SPSS statistical software. Most of the analysis consisted of frequency distributions and cross-tabulations to determine commonality of responses and to investigate the impact of pre-existing knowledge and experience.

In an effort to ensure useful and detailed information was gathered from the parents, the data collection method was conducted similar to a mail-out. While this method increases the loss of control, as well as the risk of gathering data in a timely fashion, this type of method was deemed to be the most effective means of engaging the parents. Fifteen parent surveys were sent to each school in the study for a total of 370 surveys. The school representative randomly distributed the 15 parent surveys to the students who completed a high school survey. A pre-addressed envelope was included with the questionnaire to enable an effective and efficient way to increase the likelihood of parents returning the questionnaire to the school contact identified. A total of 119 surveys were returned by parents giving a response rate of 32%. Diagram 1 depicts the schools and respective locations that participated in the study.

DIAGRAM 1: MAP OF LOCATIONS SURVEYED

Mealy Mountain Collegiate - Happy Valley Goose Bay
Parents 4
Harriot Curtis Collegiate - St. Anthony
Parents 2
Baie Verte High School - Baie Verte
Parents 10
Lewisporte Collegiate - Lewisporte
Parents 9
Cow Head School Complex - Cow Head
Parents 6
Lester Pearson Memorial High - Wesleyville
Parents 9
Herman Collegiate - Corner Brook
Parents 10
Stephenville High - Stephenville
Parents 8
Queen Elizabeth Regional High - Conception Bay South
Parents 9
King Academy - Harbour Breton
Parents 9
Prince of Wales Collegiate - St. John's
Parents 5
St. James Regional High - Port Aux Basques
Parents 5
John Burke Academy - Grand Bank
Parents 8
Tricentia Academy - Arnold's Cove
Parents 7
Baltimore High - Ferryland
Parents 7
Dunne Memorial Academy - St. Mary's
Parents 11

1.0 BACKGROUND INFORMATION

The purpose of the first series of questions was to garner information on the profile of parents such as relationship to the high school student, gender, level of education, employment status, and the industry in which the respondent is employed.

The primary respondent of the 'Parents' survey was the mother at 68.1%, followed by the father at 29.4%. The following table provides a summary of data regarding the relationship to the student.

TABLE 1

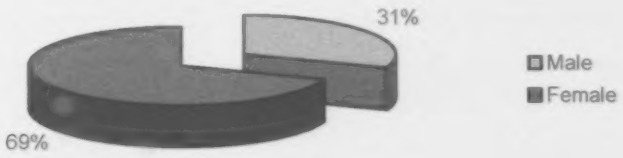
RELATIONSHIP TO STUDENT

Relationship	% of Parents
Mother	68.1 %
Father	29.4 %
Guardian	1.7 %
Grandparent	0.0 %
Other	0.8 %

In this report, "Parents" will be used to refer to all caregivers listed above (i.e. the total of all respondents.

Data collected regarding the gender of the parents indicated that 69.5% were female and 30.5% were male. In light of this, the gender distribution percentages indicated in the report reflect this distribution between male and female respondents.

CHART 1: GENDER



One-third of the parents who responded to the survey had received a public college certificate/diploma as their highest level of education. High school graduate and bachelor's degree also ranked relatively high, indicated by 18.5% and 11.8%, respectively. Table 2 provides a summary of data collected regarding parents' highest level of education.

TABLE 2 PARENTS' OWN HIGHEST LEVEL OF EDUCATION	
Level	**% of Parents**
Public college certificate/diploma	33.6 %
High school graduate	18.5 %
Bachelor's degree	11.8 %
Completed grade 9 or less	10.1 %
Some high school	9.2 %
Private college certificate/diploma	5.9 %
Master's degree or higher	5.9 %
Other	5.0 %

When asked of the student's other parent/guardian's highest level of education, respondents indicated that 26.5% of the other parents had received a public college certificate/diploma, 25.6% were high school graduates, and 17.1% had some high school education. Table 3 provides a summary of data collected regarding the other parents' highest level of education.

TABLE 3 OTHER PARENTS' HIGHEST LEVEL OF EDUCATION	
Level	**% of Parents**
Public college certificate/diploma	26.5 %
High school graduate	25.6 %
Some high school	17.1 %
Completed grade 9 or less	12.0 %
Private college certificate/diploma	6.0 %
Bachelor's degree	5.1 %
Master's degree or higher	4.3 %
Not applicable	2.6 %
Other	0.9 %

Parents were also asked to indicate the industry in which they worked. Almost 80.0% indicated they worked in a sector other than the fishery, marine, and oil and gas sectors. The following table provides a detailed breakdown of percentages.

TABLE 4 INDUSTRY IN WHICH THE PARENTS WORK	
Industry	**% of Parents**
Fishery	18.0%
Marine (non-fishery)	2.0%
Oil and gas	2.0%
Other	78.0%

These data were further reviewed on the basis of gender. The 18.0% of respondents engaged in the fishing industry comprised of 24.1% of the male respondents and 15.5% of female respondents.

To determine who the respondent considered to be the top influencers in their child's decision to pursue a post-secondary education and career, they were asked to rank from 1 to 3 the strongest influencers. Overall, respondents ranked parents (68.1%) as the most influential people on a student's decision to pursue a post-secondary education and/or career, followed by friends at 8.4%. Table 5 provides a breakdown of rankings.

TABLE 5

INFLUENCERS ON CHILD'S DECISION IN ATTENDING POST-SECONDARY EDUCATION AND CAREER

n = 119

8. **Please rank who you consider to be the top three "influencers" in your child's decision in post-secondary education and career. Please rank the following by placing the number "1" beside the strongest influencer, "2" beside the next strongest influencer and "3" beside the next strongest. (*Only rank the top 3*)**

Influencer	1	2	3	Total %
Parents	68.1%	11.8%	5.9%	85.7 %
Friends	8.4%	16.0%	21.0%	45.4 %
Teachers	3.4%	26.1%	24.4%	53.8 %
Media (i.e. movies, television, newspaper, etc.)	2.5%	3.4%	8.4%	14.3 %
School guidance counsellor	1.7%	7.6%	10.9%	20.0 %
Brothers and sisters	0.8%	15.1%	12.6%	28.6 %
Others	3.4%	6.7%	2.5%	12.6 %

It is interesting to note that parents were indicated as the strongest influencer nearly nine times as often as friends and 20 times as often as teachers. Brothers and sisters were the least often cited as the strongest influencer. While teachers were rarely cited (3.4%) as the strongest influencer, parents did feel that they had significant influence on their child's decision-making. Teachers were ranked most often as second and third influencers (26.1% and 24.4%, respectively) and overall as the second most often cited influencer (53.8%).

These data were further reviewed on the basis of gender. Approximately 80.0% of male (81.3%) and female (79.7%) respondents agreed that parents are a strong influence in their child's decision to attend post-secondary studies. Upon further analysis, only 9.0% of females and 0.0% of males ranked teachers as the most influential. In terms of media being an influencer, 28.6% of males and 10.0% of females thought it was an influence in their child's decision to pursue a post-secondary education. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, Parent Cross Tabulations and Report Tables**. A list of other influencers can be found in Appendix II of the same supplementary document.

2.0 MARINE INDUSTRY

2.3 General

Parents were given the opportunity to indicate if they were familiar with specific marine careers. Parents seemed to be most aware of positions in catering (cook/steward) (52.9%), engineering officer (45.4%) and deck hand/engineering assistant (44.5%). The following table provides a summary of parent responses regarding their familiarity with marine career choices indicated in the surveys.

TABLE 6

PARENTS FAMILIARITY WITH MARINE CAREERS

n=119

Marine Careers	# of Parents	% of Parents
Catering personnel (cook/steward)	63	52.9 %
Engineering officer	54	45.4 %
Deck hand/engineering assistant	53	44.5 %
Administrative personnel	50	42.0 %
Maintenance personnel	44	37.0 %
Deck officer	43	36.1 %
Communications personnel	40	33.6 %
Design personnel	32	26.9 %
None of the above	19	16.0%
Note: Total percentage exceeds 100% due to multiple mentions by parents.		

When analyzing the results by gender, the common theme is that males were more familiar with the listed positions than their female counterparts. The most significant variance by gender was in the marine careers of maintenance personnel (70.4% male, 43.1% female), engineering officer (71.4% male, 54.0% female) and deck hand/engineering assistant (69.0% male, 53.2% female). These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, Parent Cross Tabulations and Report Tables.**

Close to 60.0% of parents identified that they or someone they know has been employed or connected with the marine industry. Of those who said yes to being involved or knowing someone in, the marine industry, 75.4% indicated they found the work to be enjoyable, which translates to 52 parent respondents.

Based on their knowledge of, and experience with, the marine industry, 40.7% of parents were more likely to recommend a career in the marine industry to their children. Only 18.6% were less likely to recommend a career in the marine industry, while 40.7% were unsure.

Parents were given the opportunity to indicate what they considered important criteria for their child in making a career choice. Personal interest (87.3%), availability of jobs (86.4%), and salary expectations (76.3%) were the top 3 criteria cited by parents. Table 7 lists the

criteria and the respective number and percentage of parents indicating specific criteria they felt were important for their child in making a career choice.

TABLE 7

IMPORTANT CRITERIA IN MAKING A CAREER CHOICE

n= 118

Reasons	# of Parents	% of Parents
Personal interest	103	87.3 %
Availability of jobs	102	86.4 %
Salary expectations	90	76.3 %
Training/educational requirements	71	60.2 %
Support of others	63	53.8 %
Cost of education	58	49.2 %
Career reputation	55	47.0 %
Health or other personal reasons	41	34.7 %
Relocation possibilities	36	30.5 %
Family expectations	31	26.3 %
Working on the water	30	25.4 %
Knowledge of marine careers	30	25.4 %
Other	3	2.5 %

Note: Total percentage exceeds 100% due to multiple mentions by parents.

The percentages of female and male responses were similar for the following criteria: support of others; health or other personal reasons; personal interest; and, relocation possibilities. Significant variances between female and male respondents were noted for the following criteria: career reputation (34.3% male, 52.4% female); knowledge about marine careers (36.1% male, 20.7% female); and, working on the water (36.1% male, 20.7% female).

2.2 Perceptions

This section of the questionnaire was intended to gauge the perceptions of parents with respect to a career in the marine industry. A list of statements was provided to allow the parents to rate whether they disagreed or agreed with each of the statements. Statements indicating a positive or negative perception of the marine industry were explored. The data are presented through an indication of the mean or average response to each statement. A mean value of less than 3 indicates a primarily negative perception of the statement; a mean value of greater than 3 indicates a primarily positive perception of the statement. In some cases, however, the mean is not the best indicator of responses, especially if a small number of responses are at the extreme ends of the scale (i.e. 1 or 5 in this case). Therefore, in these instances, the median and/or the mode have also been used for analytical purposes. The median indicates the middle point – one half of the responses were below it and one half were above it. The mode identifies the most frequently cited response(s). Unlike the mean, the mode is not affected by extreme responses. All three of these analytical measures of data are utilized to examine the data in Tables 8 and 9.

The following seven statements were notable positive considerations regarding perceptions of careers in the marine industry (mean ratings of 3.5 or greater):

- opportunities for professional certification;
- marine careers are physically demanding;
- high salaries and benefits;
- variety and excitement;
- good opportunities for promotion;
- marine careers require overtime work; and,
- marine careers offer full-time year-round work.

Both male and female parents rated each of the preceding considerations relatively equally.

It is worth noting that these same statements had median of 4.0 signifying that one-half of the respondents indicated agreed or strongly agreed with these statements. Additionally, for these same statements a mode of 4.0 was revealed, indicating the majority of responses were that parents agree with these statements. Table 8 illustrates the mean scores for each of these statements. Charts 2 through 8 visually depict the frequency of responses of the aforementioned statements.

TABLE 8

FACTORS WITH RESPECT TO THE MARINE INDUSTRY (MEAN SCORES)

14. On a scale of 1 to 5, where 1 indicates "Strongly Disagree" and 5 indicates "Strongly Agree," please rate the following factors with respect to a career in the marine industry.

	1	2	3	4	5	MEAN SCORE
There are opportunities for professional certification				▲		3.8
Marine careers are physically demanding				▲		3.7
There are high salaries and benefits				▲		3.7
There is variety and excitement				▲		3.7
There are good opportunities for promotion				▲		3.7
Marine careers require overtime work				▲		3.6
Marine careers offer full time year round work				▲		3.5
Marine careers require going to sea				▲		3.4
Education and training is expensive				▲		3.4
There are flexible work hours				▲		3.4
Marine careers often require working in isolated environments				▲		3.4
Marine careers are prestigious			▲			3.2
There are good hours of work			▲			3.2
Education for marine careers is long and challenging			▲			3.1
Jobs are readily available			▲			3.0
Marine careers provide extended time at home			▲			2.9
Little education and training is required		▲				2.2

CHART 2: PROFESSIONAL CERTIFICATION

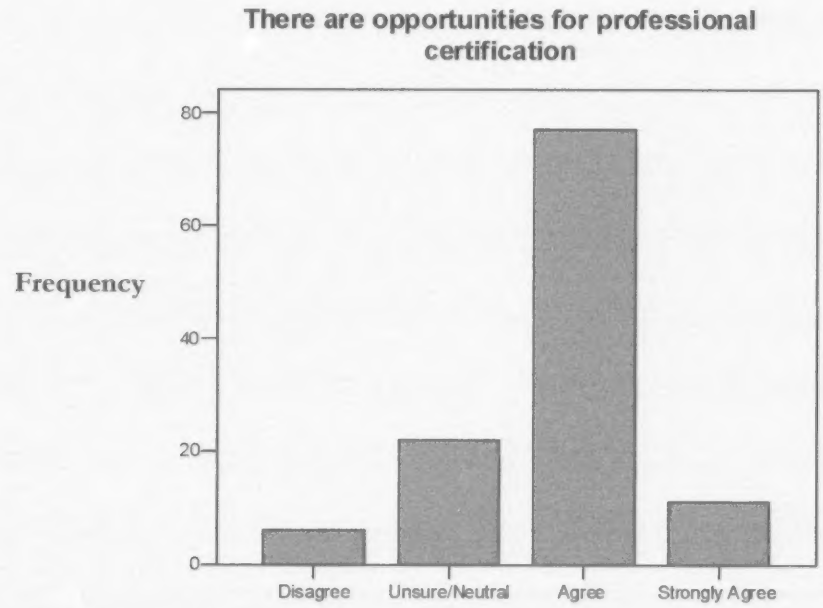


CHART 3: MARINE CAREERS PHYSICALLY DEMANDING

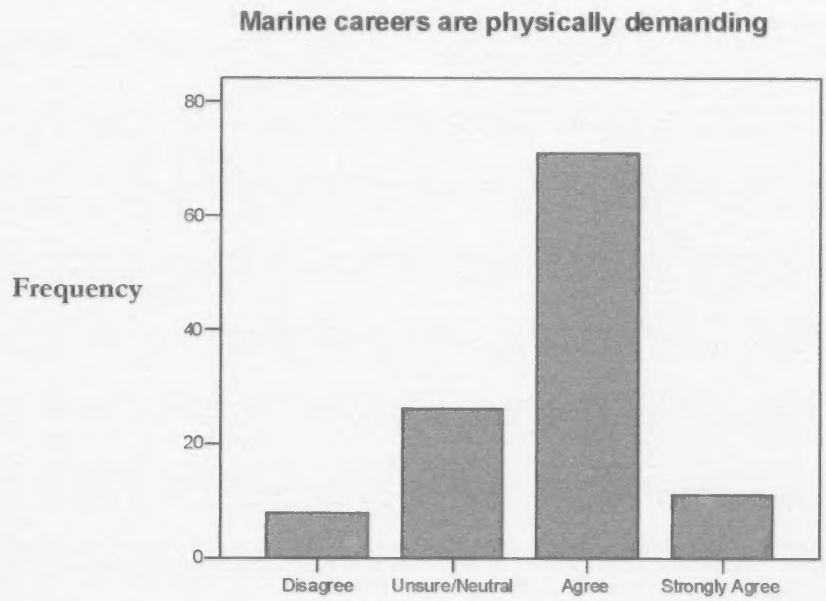


CHART 4: HIGH SALARIES AND BENEFITS

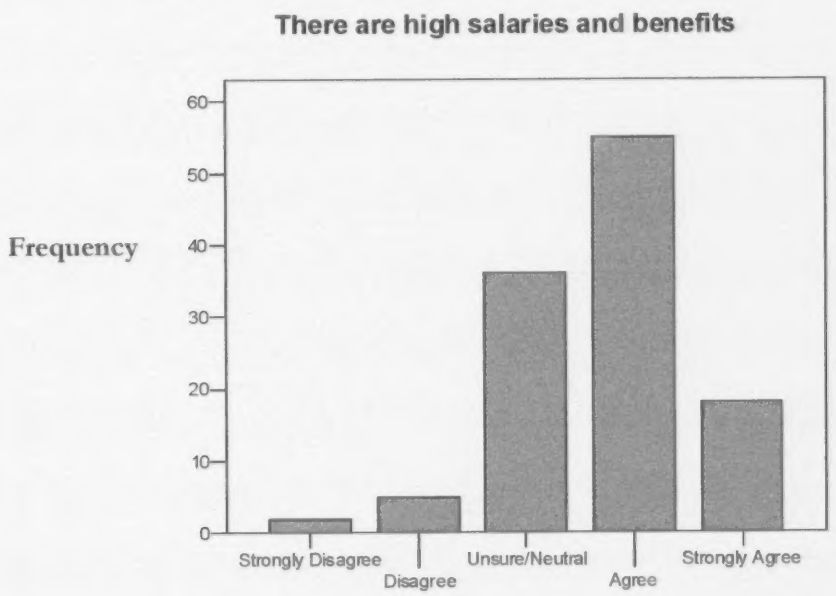


CHART 5: VARIETY AND EXCITEMENT

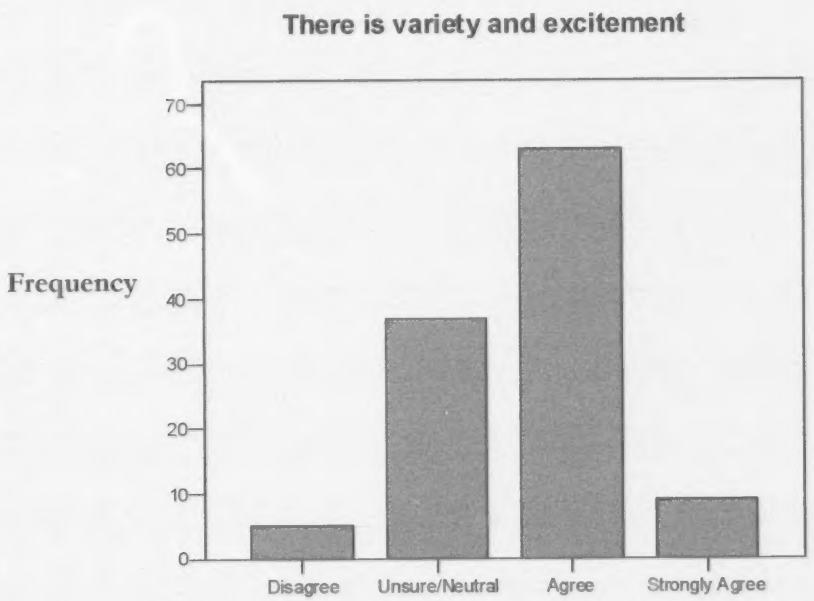


CHART 6: GOOD OPPORTUNITIES FOR PROMOTION

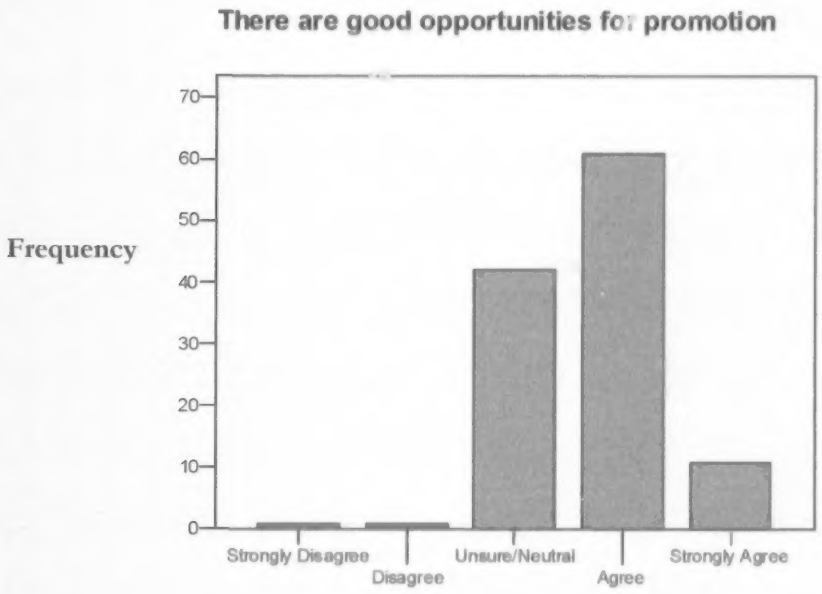


CHART 7: MARINE CAREERS REQUIRE OVERTIME

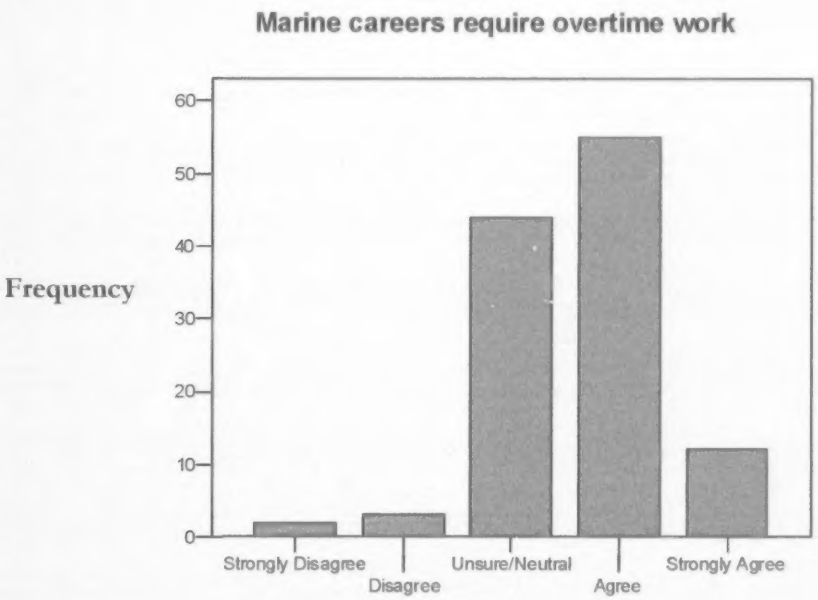
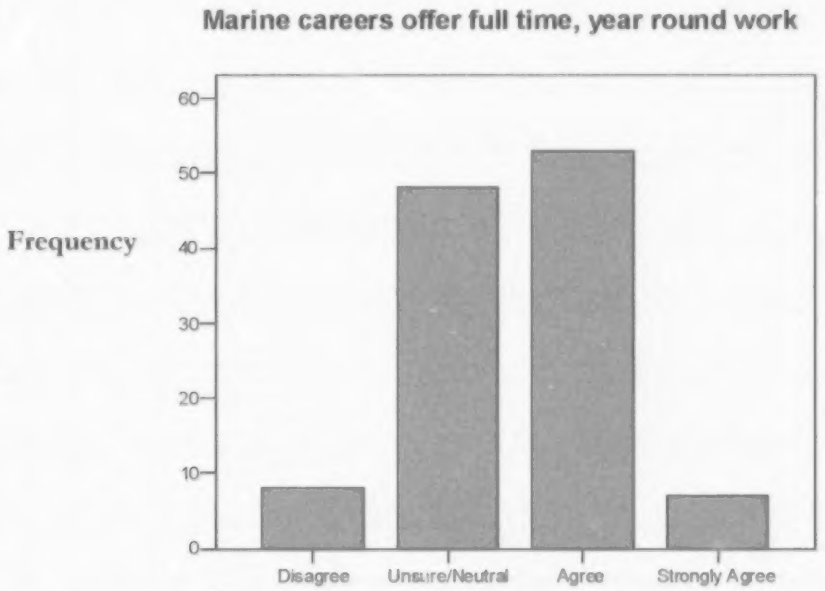
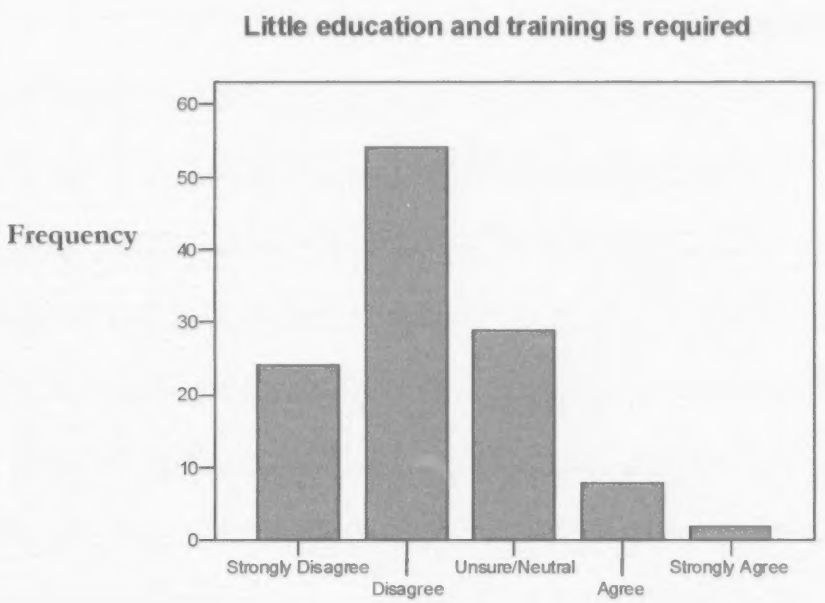


CHART 8: OFFER FULL-TIME YEAR-ROUND WORK



Furthermore, the statement "Little education and training is required" should be noted because of its rating of 2.2/5. This indicates that most respondents disagreed with this statement and it was given less credence. Chart 9 depicts the frequency of responses for this statement.

CHART 9: LITTLE EDUCATION AND TRAINING



These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, Parent Cross Tabulations and Report Tables.**

2.3 Gender Issues

Statements indicating a positive or negative perception of the marine industry based on gender were also investigated. "Women can work anywhere in the marine industry" (3.9) and "There are equal opportunities for men and women in the marine industry" (3.6) were two of the notable factors relating to the perception of gender equality in marine careers (mean ratings of 3.5 or greater). It is also worth noting that for the statements "There are equal opportunities for men and women" and "Women can work anywhere in the marine industry", both the median and the mode are 4.0 for each of these. That is, one-half of the respondents indicated they agreed or strongly agreed with these statements and the most cited response was that they agreed.

"A woman could not be the captain of a ship" (2.0), and "Women in the marine industry can only work in shore-based, office & administrative jobs" (1.9) were noteworthy as perceptions given less credence (mean ratings of 2.0 or less). These two statements each have a median of 2.0 and a mode of 2.0. This signifies that one half of the respondents indicated they disagreed or strongly disagreed with these statements and the most cited response was that they disagreed. Table 9 illustrates the mean scores for each of these statements. Charts 10 through 19 visually depict the frequency of responses of the statements with a mean rating of 3.5 or greater and those statements with a mean rating of 2.5 or lower.

TABLE 9

FACTORS WITH RESPECT TO THE MARINE INDUSTRY (GENDER)
(MEAN SCORES)

15. On a scale of 1 to 5, where 1 indicates "Strongly Disagree" and 5 indicates "Strongly Agree," please rate the following factors with respect to a career in the marine industry.

	1	2	3	4	5	MEAN SCORE
Women can work anywhere in the marine industry				▲		3.9
There are equal opportunities for men and women in the marine industry				▲		3.6
Women and men are treated as equals in marine careers			▲			3.2
The marine industry is male dominated			▲			3.2
Women face harassment working the marine industry			▲			2.8
Marine industry careers are intimidating for women			▲			2.6
Ships are not built to properly accommodate women			▲			2.5
Having men and women on a vessel as a crew can cause problems		▲				2.4
Women do not want to be at sea because they need to be close to home		▲				2.2
Women cannot get jobs in the marine industry		▲				2.1
Women are not physically strong enough to work in marine careers		▲				2.1
Marine industry careers are unsuited for women		▲				2.1
A woman could not be the captain of a ship		▲				2.0
Women in marine industry can only work in shore-based, office & administrative jobs		▲				2.0

CHART 10: WOMEN CAN WORK ANYWHERE

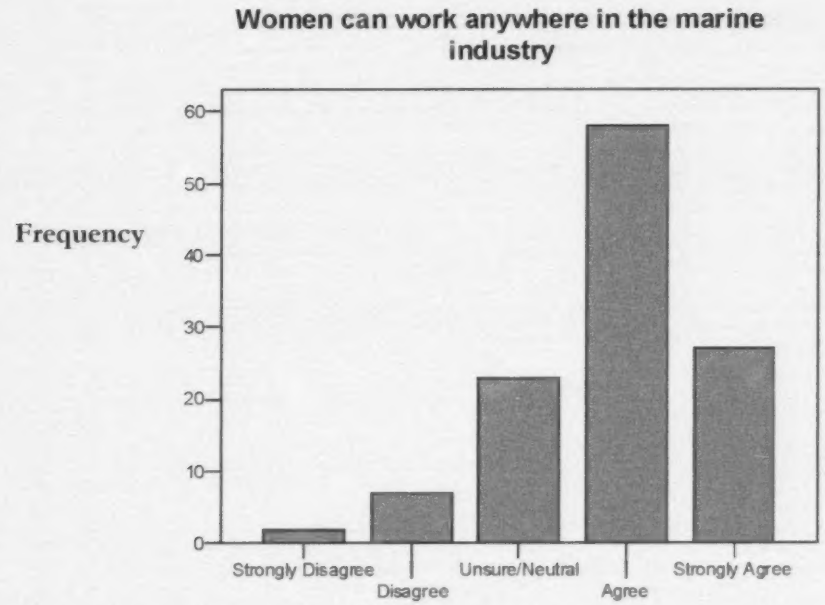


CHART 11: EQUAL OPPORTUNITIES

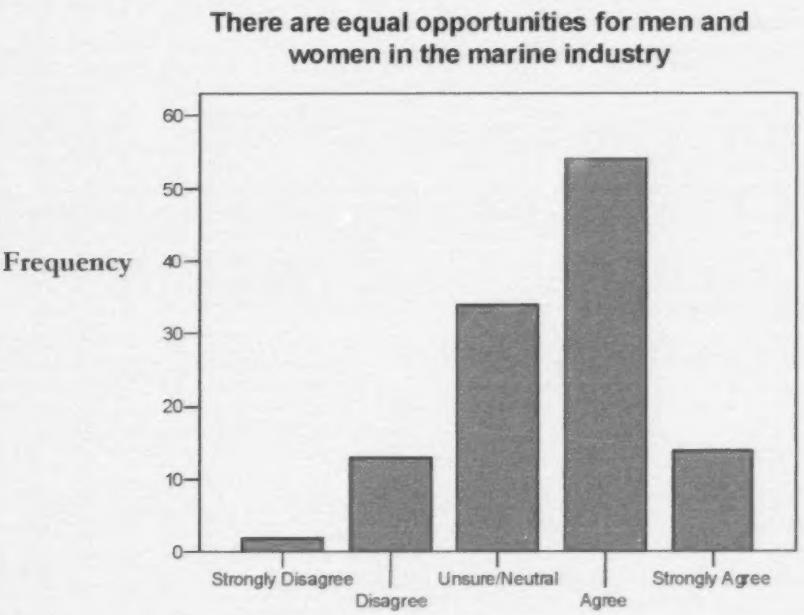


CHART 12: SHIPS NOT BUILT TO ACCOMMODATE WOMEN

CHART 13: MEN AND WOMEN ON VESSEL CAUSE PROBLEMS

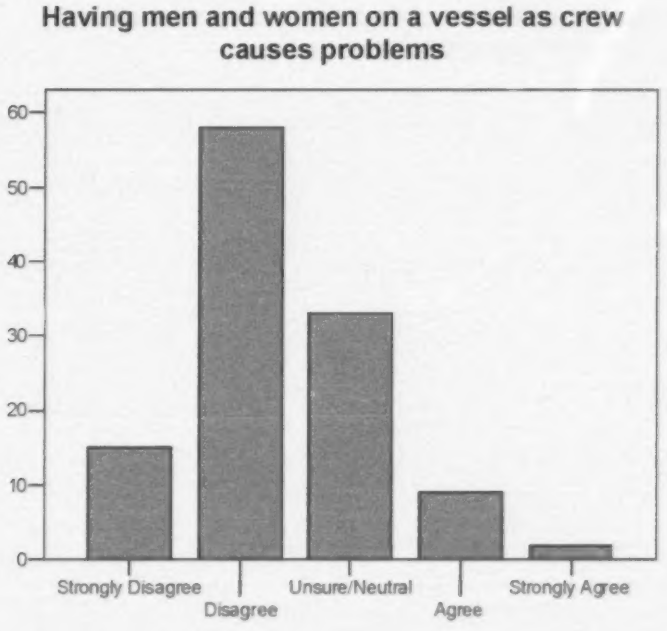


CHART 14: WOMEN NOT AT SEA, NEED TO BE CLOSE TO HOME

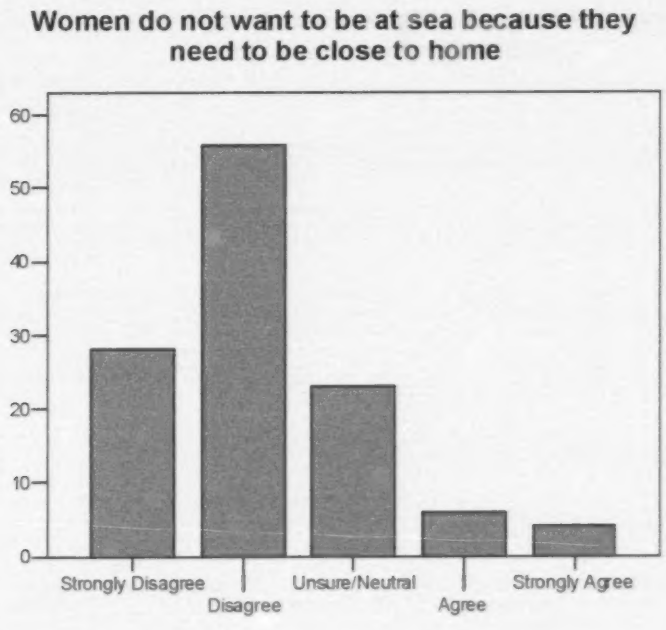


CHART 15: WOMEN CANNOT GET JOBS IN MARINE INDUSTRY

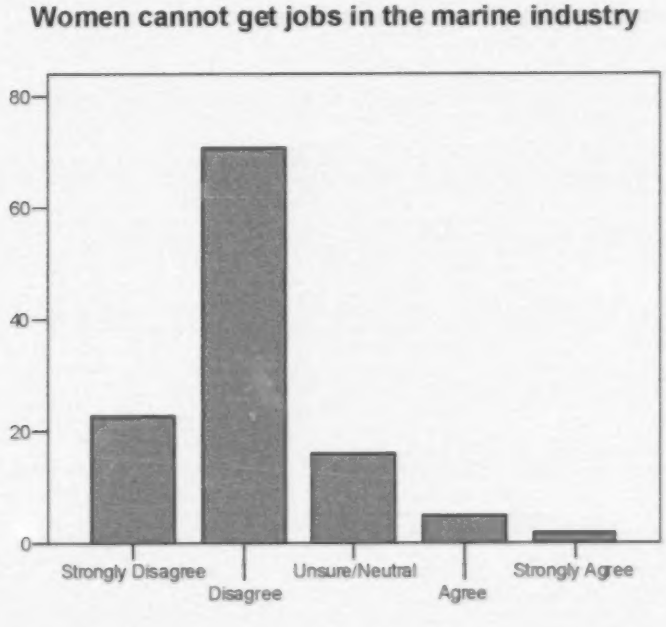


CHART 16: WOMEN NOT PHYSICALLY STRONG ENOUGH

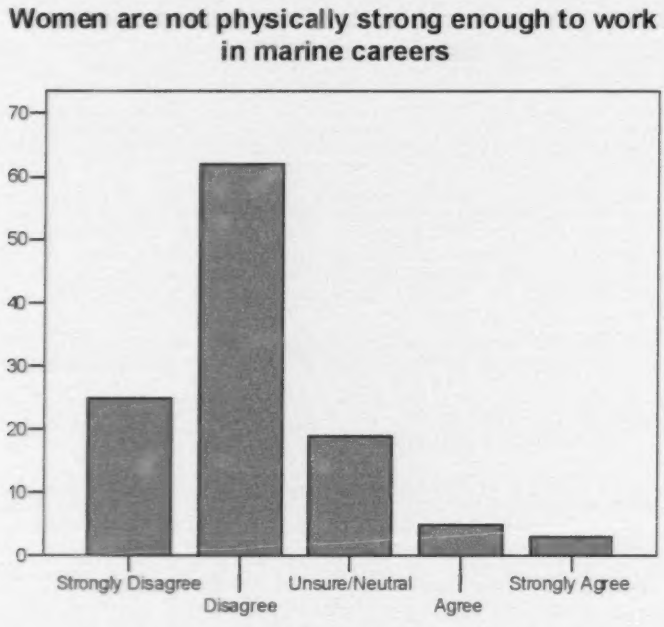


CHART 17: MARINE CAREERS UNSUITED FOR WOMEN

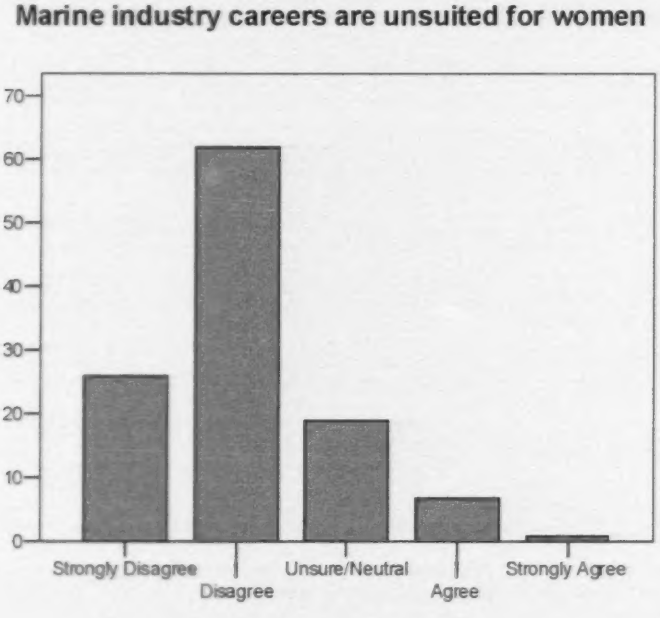


CHART 18: CAPTAIN OF A SHIP

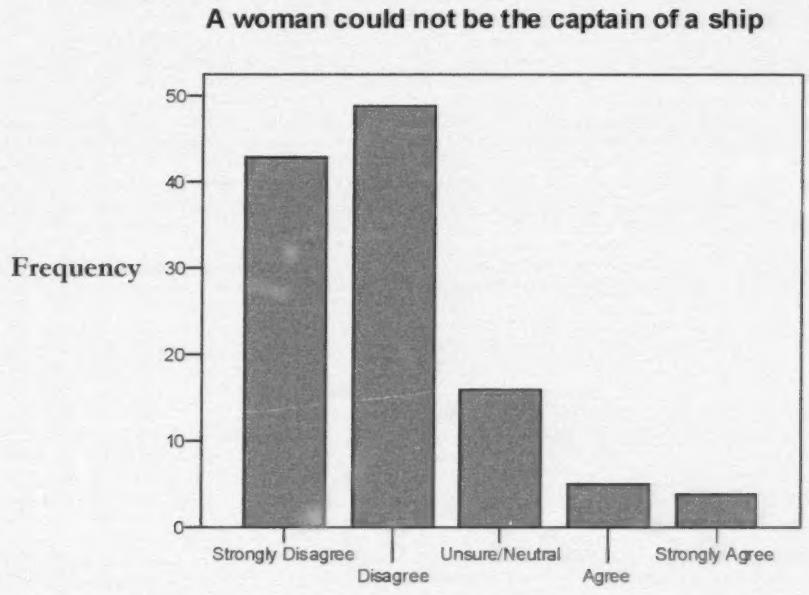
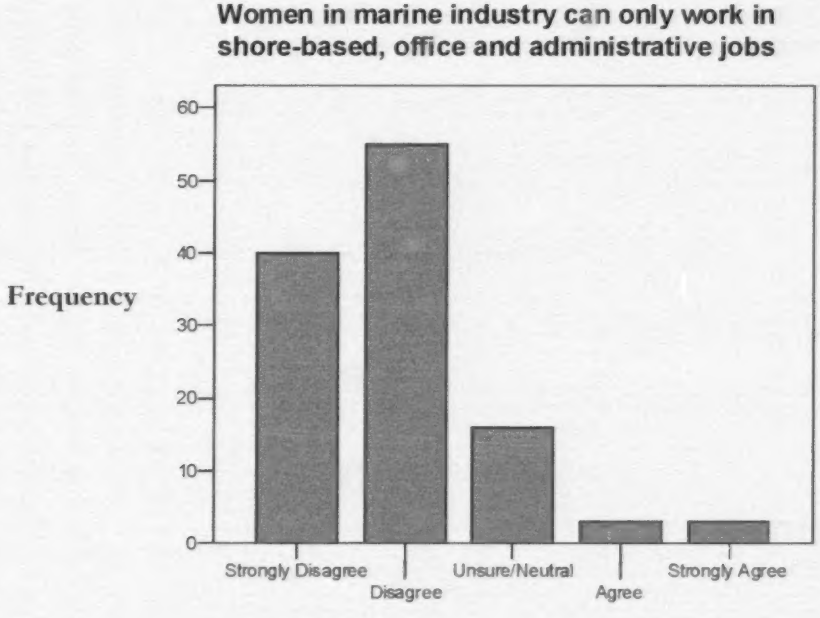


CHART 19: ONLY WORK IN SHORE-BASED, OFFICE & ADMINISTRATIVE



It is also worth noting that the only two statements that revealed a median and a mode of 3.0 (unsure/neutral) were "Women and men are treated as equals in marine careers" and "Women face harassment working in the marine industry". Charts 20 and 21 depict the frequency of responses for these statements.

CHART 20: TREATED AS EQUALS

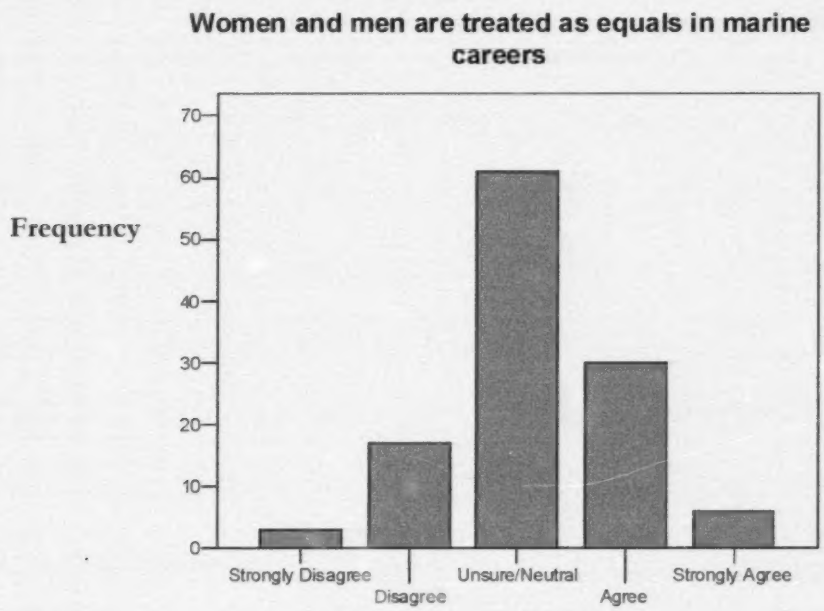
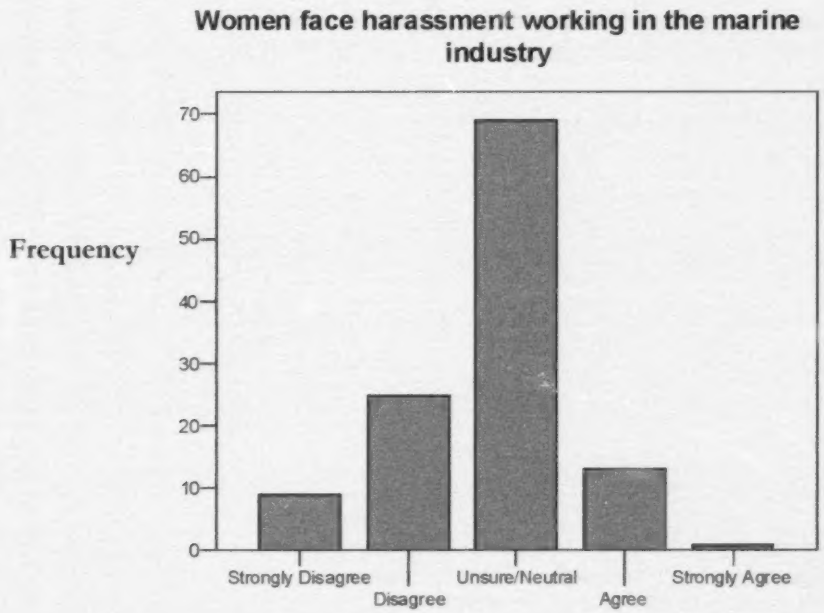


CHART 21: FACE HARRASSMENT



The aforementioned statements listed in Table 9 regarding gender issues/perceptions in the marine industry showed very minimal variance between male and female parents.

2.4 Marine Careers

Parents were asked to rate how much they knew about shore-based versus at-sea/on water marine careers. A five-point scale, with 1 indicating "Very Little" and 5 indicating "Very Much," was used. As indicated in Table 10, about 41.0% of parents who responded to this question rated their knowledge of shore based careers at 2 or lower, compared to 10.4% of parents who rated their knowledge of shore based careers at 4 or higher.

TABLE 10

KNOWLEDGE OF SHORE BASED MARINE CAREERS

n= 116

Rating	# of Parents	% of Parents
1 out of 5	29	25.0 %
2 out of 5	18	15.5 %
3 out of 5	14	12.1 %
4 out of 5	9	7.8 %
5 out of 5	3	2.6 %
Don't Know	43	37.1 %

On the basis of gender, of the total female respondents (n=79), 31.6% knew very little and only 1.3% knew very much about shore-based marine careers. On the other hand, of the total male respondents (n=37), a smaller percentage (10.8%) knew very little about shore-based marine careers and 5.4% knew very much about shore-based marine careers. Overall, male respondents did seem to be more knowledgeable than female respondents about shore-based marine careers. Furthermore, it should be noted that 43.0% of female respondents didn't know about shore-based marine careers compared to 25.0% of male respondents. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, Parent Cross Tabulations and Report Tables.**

With regard to respondents' knowledge of at-sea/on water careers, nearly one-third (31.1%) of parents rated their knowledge at 2 or lower, meaning they indicated very little or little knowledge of at-sea/on water careers. Alternatively, 21.5% of parents rated their knowledge at 4 or higher, signifying they knew very much or much about at-sea/on water careers. Table 11 provides a breakdown of the parents' responses.

TABLE 11 KNOWLEDGE OF AT-SEA/ON WATER MARINE CAREERS n=116		
Rating	**# of Parents**	**% of Parents**
1 out of 5	25	21.6 %
2 out of 5	11	9.5 %
3 out of 5	19	16.4%
4 out of 5	13	11.2%
5 out of 5	12	10.3%
Don't know	36	31.0%

On the basis of gender, of the total female respondents (n=79), 25.3% knew very little, and only 1.3% knew very much, about at-sea/on water marine careers. On the other hand, of the total male respondents (n=37), a smaller percentage (13.5%) knew very little about at-sea/on water marine careers compared to 29.7% who knew very much about at-sea/on water marine careers. Furthermore, it should be noted that 36.7% of female respondents didn't know about at-sea/on water marine careers compared to 18.9% of male respondents. Overall, male respondents did seem to be more knowledgeable than female respondents about at-sea/on water marine careers. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, Parent Cross Tabulations and Report Tables**

Eighty percent of parents believed their child would be willing to work away from home for extended periods of time. It is interesting to note that almost an equally high percentage of male and female parents (81.1% and 79.5%, respectively) thought their child would be willing to work away from home for an extend period of time.

2.5 Educational and Training Requirements

In this section, parents were asked about their opinions on educational and training requirements needed for working in the marine industry. Parents indicated that teamwork (95.6%), communication (88.6%), and navigational skills (85.1%), were the most needed skills for a marine career. The following table provides a summary of parent rankings of a list of skills provided in the survey.

TABLE 12 SKILLS NEEDED FOR A MARINE CAREER n=114		
Skills	**# of Parents**	**% of Parents**
Teamwork	109	95.6 %
Communication	101	88.6 %
Navigational skills	97	85.1 %
Computer automation	94	82.5 %
Interpersonal skills	87	76.3 %
Leadership	84	73.7 %
Planning/organizing	81	71.0 %
Mechanical training	76	66.7 %
Management skills	74	64.9 %
Blueprint reading	55	48.2 %
Other	3	2.6 %
Note: Total percentage exceeds 100% due to multiple mentions by parents.		

Furthermore, these data were reviewed on the basis of gender. Upon analyzing the gender data further, the most significant variances between male and female parents in selecting a skill needed for a marine career were in the skills of mechanical training (48.6% male, 74.7% female) and blueprint reading (34.3% male, 54.4% female). The gender distribution was about the same in the skills of interpersonal (74.3% male, 75.9% female), computer automation (80.0% male, 82.3% female) and communication (85.7% male, 88.6% female).

In terms of perceptions regarding the best place to receive skills required for a marine career, respondents provided the data presented in Table 13. Not surprisingly, almost all (97.4%) of parents indicated the Marine Institute as one of the places to obtain an education for marine careers.

TABLE 13 WHERE TO OBTAIN SKILLS FOR A MARINE CAREER n=116		
Location	**# of Parents**	**% of Parents**
Marine Institute	113	97.4 %
Memorial University	75	64.7 %
College of the North Atlantic	55	47.4 %
On-the-job	50	43.1 %
Other universities	37	31.9 %
Other public colleges	16	13.8 %
Private colleges	10	8.6 %
Don't know	3	2.6 %
Other	3	2.6 %
Note: Total percentage exceeds 100% due to multiple mentions by parents.		

These data were reviewed further on the basis of gender. The greatest variations between male and female parents on where they could receive skills for the marine industry were with on-the-job training (55.6% male, 37.5% female), Memorial University (58.3% male, 66.3% female) and the Marine Institute (100% male, 95.0% female). It is interesting to note that for the remaining options, the gender variance was within 4 percentage points between male and female respondents. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, Parent Cross Tabulations and Report Tables.**

Only about one-fifth (20.5%) of parents (19.0% of males, 21.3% females) felt that it is necessary to leave the province in order to obtain training for a marine career. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, Parent Cross Tabulations and Report Tables.**

Overall, parents believed that the minimum level of education required to enter a marine career is graduation from high school (71.6%). The following table provides an overview of the perceived minimum levels of education for a marine career.

TABLE 14

MINIMUM LEVEL OF EDUCATION REQUIRED

n=116

Education Level	# of Parents	% of Parents
High school graduate	83	71.6 %
Public college	16	13.8 %
Private college certificate/ diploma	6	5.2 %
Some high school	4	3.4 %
Bachelor's degree	3	2.6 %
Completed Grade 9 or less	2	1.7 %
Masters or higher	1	0.9 %
Other	1	0.9 %
Total	116	100.0%

Upon supplementary gender analysis, both male and female respondents believed that high school graduation (75.0% male, 70.0% female) is the minimum level of education needed to enter the marine industry. With respect to public colleges, 13.9% of males and 13.8% of females felt this was the minimum level of education required for entering the marine industry. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, Parent Cross Tabulations and Report Tables.**

2.6 Financial Incentives/ Inducements

Of the parents who responded to the question on how salaries in the marine industry compare to the average salary of Newfoundlanders and Labradorians employed in other sectors, one-half felt the salaries are higher in the marine industry. Table 15 provides an overview of parent perceptions of salary comparisons between the marine industry and other sectors in the province.

TABLE 15

SALARY COMPARISON

n= 116

Salary Comparison	# of Parents	% of Parents
Salaries are higher	58	50.0 %
Do not know/unsure	48	41.4 %
Salaries are the same	8	6.9 %
Salaries are lower	2	1.7 %
Total	116	100.0 %

According to gender, 61.1% of male parents compared to 45.0% of female parents believed that salaries are higher for those employed in the marine industry compared to the average salary of Newfoundlanders and Labradorians employed in other sectors. There were more female parents (47.5%) than male parents (27.8%) who were unsure or didn't know how the salary compensation differed. There was minimal variance between male and female parents with respect to whether salaries are lower or salaries are the same for those employed in the marine industry compared to the average salary of Newfoundlanders and Labradorians employed in other sectors. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, Parent Cross Tabulations and Report Tables.**

2.7 Knowledge of Marine Institute

Of the parents who responded to the question of availability of programs at the Marine Institute, nearly 43.0% indicated a lack of awareness. Over one-half of parents believed that a Diploma of Technology was available through the Marine Institute. As well, slightly over one-third of parents believed short-term certificates were available at the Marine Institute. Table 16 provides a list of the types of programs available at the Marine Institute and the percentage of parents who responded.

TABLE 16

TYPES OF PROGRAMS AVAILABLE AT THE MARINE INSTITUTE

n= 116

Programs	# of Parents	% of Parents
Diploma of technology	62	53.4 %
Do not know	49	42.2 %
Short-term certificate	40	34.5 %
Post-graduate diplomas	33	28.4 %
Bachelor's degree	28	24.1 %
Master's degree	24	20.7 %
Note: Total percentage exceeds 100% due to multiple mentions by parents		

The awareness of programs available at the Marine Institute was examined on the basis of gender. For the most part, 46.3% of female parents and 33.3% of male parents indicated that they didn't know/were unsure about the types of programs available. However, there was some variance between male parents and female parents on awareness of the Diploma of Technology (63.9% male, 48.8% female) and the Bachelor's degree (33.3% male, 20.0% female) at the Marine Institute. In all the types of programs listed on the survey available at the Marine Institute, male respondents were more aware of the types of programs. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, Parent Cross Tabulations and Report Tables.**

Parents were asked to rank their perception from 1 to 5 on the reputations of a list of institutions. Memorial University of Newfoundland was ranked first by 62.2% of the parents and the Marine Institute was the next highest ranked institution, by 21.8% of parents. The Marine Institute was indicated most often as the second most prestigious institution (48.7% of parents). Table 17 provides a breakdown of the results for the first and second rankings.

TABLE 17 PERCEPTION OF REPUTATION OF INSTITUTIONS		
28. Please rank your perception of the reputations of the following institutions, 1 being the institution with the best reputation, 2 being the next, 3 being the third, 4 being the forth, and 5 being the fifth.		
Institution	**1**	**2**
Memorial University	62.2 %	21.8 %
Marine Institute	21.8 %	48.7 %
College of the North Atlantic	5.0 %	19.3 %
Private college	1.7 %	10.1 %
Other public colleges	0.8 %	0.0 %

On the basis of gender, of those parents who ranked Memorial University as the top institution in terms of reputation, 73.3% were female and 61.3% were male. Significant variances were also noted for the Marine Institute (34.4% male, 18.7% female). When evaluating the second ranked institutions, the distribution by gender was more significant for the College of the North Atlantic. Specifically, 6.3% of male respondents and 28.4% of female respondents ranked this institution second; for the Marine Institute, male and female respondents indicated almost equally this institution as second ranked and Memorial University's gender distribution was the same for both first and second rankings. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, Parent Cross Tabulations and Report Tables.**

3.0 SUMMARY ISSUES AND IMPLICATIONS

The following review of interview findings focuses on potential issues to be addressed by the Marine Careers Secretariat. The issues are organized and presented according to the main sections of the questionnaire.

Background Information

There were a total of 119 surveys returned by parents for a response rate of 32.0%. The mother was the primary respondent of the survey. Most of the parents have received a public college certificate/diploma as their highest level of education.

Overall, respondents ranked parents as the most influential people on their child's decision to pursue a post-secondary education and /or career.

Marine Industry

Parents seemed to be most aware of positions in catering (cook/steward), engineering officer and deck hand/engineering assistant. Based on their knowledge of, and experience with, the marine industry, one-fifth of parents were less likely to recommend a career in the marine industry to their children. An additional 40.0% of parents were more likely to recommend a career in the marine industry to their children.

Personal interest, availability of jobs, and salary expectations were the top 3 reasons cited by parents as important criteria for their child in making a career choice.

Perceptions

Parents indicated they agreed with the following seven statements as perceptions of careers in the marine industry (mean ratings of 3.5 or greater):

- opportunities for professional certification;
- marine careers are physically demanding;
- high salaries and benefits;
- variety and excitement;
- good opportunities for promotion;
- marine careers require overtime work; and,
- marine careers offer full-time year-round work.

Gender Issues

There was a perception among parents that women are capable of performing the same tasks and activities as men in marine careers. The evaluation of gender factors with respect to the marine industry indicates disagreement with the statements suggesting that women do not have the same opportunities and capabilities as men.

Marine Careers

Knowledge of both shore-based careers and at-sea/on water marine careers was somewhat low by parents who responded to the question of how much they knew about these marine careers.

Educational and Training Requirements

Overall, parents believed that the minimum level of education required to enter a marine career is graduation from high school. In terms of perceptions regarding the best place to receive skills required for a marine career, not surprisingly, nearly all parents indicated the Marine Institute as one of the places to obtain an education for marine careers. Parents indicated that teamwork, communication, and navigational skills were the most needed skills for a marine career. Only about one-fifth of parents felt that it is necessary to leave the province in order to obtain training for a marine career.

Financial Incentives/Inducements

One-half of parents felt that salaries are higher in the marine industry compared to the average salary of Newfoundlanders and Labradorians employed in other sectors.

Knowledge of Marine Institute

Less than one-half of parents were unaware of the programs available at the Marine Institute. However, parents were aware that a diploma of technology and a short-term certificate was available through the Marine Institute.

Overall, the perception of the Marine Institute was positive as it was ranked second as the most reputable institution after Memorial University.

PERCEPTIONS OF MARINE CAREER OPPORTUNITIES IN THE MARINE INDUSTRY

Post-Secondary Students

Final Report

Submitted To:

MARINE CAREERS SECRETARIAT

Submitted by:

P. J. GARDINER INSTITUTE FOR ENTERPRISE AND ENTREPRENEURSHIP
FACULTY OF BUSINESS ADMINISTRATION
MEMORIAL UNIVERSITY

November 2004

Memorial
University of Newfoundland

P. J. Gardiner Institute

PERCEPTIONS OF CAREER OPPORTUNITIES IN THE MARINE INDUSTRY

POST-SECONDARY STUDENTS

Report

SUBMITTED TO:

MARINE CAREERS SECRETARIAT

SUBMITTED BY:

P.J. GARDINER INSTITUTE FOR ENTERPRISE AND ENTREPRENEURSHIP
FACULTY OF BUSINESS ADMINISTRATION
MEMORIAL UNIVERSITY

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RESULTS

The information and data gathered in the survey were analyzed using SPSS statistical software. Most of the analysis consisted of frequency distributions and cross-tabulations to determine commonality of responses and to investigate the impact of pre-existing knowledge and experience.

To obtain results from post-secondary students, a class from Memorial University was accessed as well as a class from the Marine Institute. A total of 56 post-secondary students responded to the survey.

1.0 BACKGROUND INFORMATION

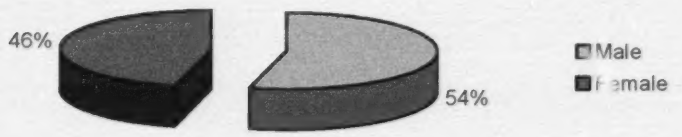
The purpose of the first series of questions was to garner information on the profile of post-secondary school students as it relates to gender, diversity group, factors of consideration in choosing a career and the main influencers in the decision to pursue a post-secondary education and career.

1.1 Demographic Profile of Respondents

i) Gender

Of the total respondents (n=56), there was a relatively even division between the number of males and the number of females who responded to the survey. Data collected indicated that just over half (54.0%) of the students surveyed were male, while slightly under half (46.0%) were female.

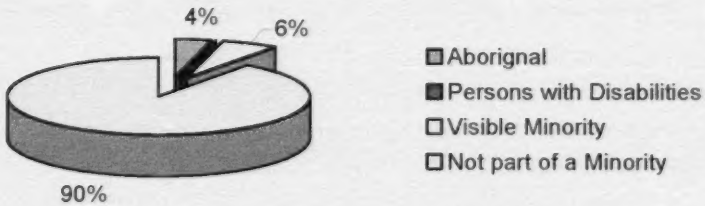
CHART 1: GENDER



ii) Diversity Groups

The data collected indicated the diversity of the group surveyed. Approximately 3.8% of the post-secondary students who responded to the question identified themselves as aboriginal, 0.0% as persons with disabilities, and 5.7% as members of a visible minority.

CHART 2: DIVERSITY GROUPS



Diversity groups were further examined on the basis of gender. Of those students who responded to this question, 86.7% of males and 95.7% of females did not identify themselves as part of a minority.

iii) Post-Secondary Education Opinions

Post-secondary students were asked to indicate the area of study they intended to pursue. Eleven percent of students indicated they were undecided as to a career choice. Among those students who were decided as to a career choice, a variety of areas were listed such as nautical science (14 respondents), education (3 respondents), nursing (3 respondents), kinesiology (3 respondents), and food science (3 respondents).

Data were collected as to what the students considered as positive factors in choosing a career. Wages was indicated by 83.9% of students as the most significant factor in choosing a career. Almost 80.0% of students indicated that job stability was also very important. In addition, benefits (health care, pension, etc), opportunity to travel and variety and excitement rated relatively high. Table 1 provides a summary of data collected regarding factors positively influencing career choice.

TABLE 1

POSTIVE FACTORS IN CHOOSING A CAREER

n= 56

Factors	# of Students	% of Students
Wages	47	83.9 %
Job stability	44	78.6 %
Benefits (health care, pension, etc)	40	71.4 %
Opportunity to travel	36	64.3 %
Variety and excitement	36	64.3 %
Year round full-time work	31	55.4 %
Opportunity for promotion	29	51.8 %
Flexible work hours	28	50.0 %
Leisure time	28	50.0 %
High quality family life	26	46.4 %
Prestige/status	16	28.6 %
Professional certification	16	28.6 %
Working outside	16	28.6 %
Live in own community	13	23.2 %
Requires physical labour	8	14.3 %
Working inside	5	8.9 %
Other	9	16.1 %

Note: Total percentage exceeds 100% due to multiple mentions by students.

Factors positively influencing choice of a career were examined on the basis of gender and some significant variances were noted. Male students rated the following factors higher than female students did: wages (90.0% males, 76.9% females), opportunity to travel (83.3% males, 42.3% females), working outside (36.7% males, 19.2% females), professional

certification (33.3% males, 23.1% females) and requires physical labour (23.3% males, 3.8% females). Factors such as job stability (66.7% males, 92.3% females), full-time year round work (50.0% males, 61.5% females) and opportunity for promotion (46.7% males, 57.7% females) were rated higher by female students. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, Post-Secondary Student Cross Tabulations and Report Tables.**

To determine who influenced the respondents' decision to pursue a post-secondary education and/or career, students were asked to rank from 1 to 3 their strongest influencers. Overall, students ranked their parents (46.4%) as the most influential people when deciding to pursue a post-secondary education and/or career, followed by friends at 16.1%. Table 2 provides the list in order of the strongest influencers.

TABLE 2

INFLUENCERS ON DECISION TO ATTEND POST-SECONDARY STUDIES

n=56

6. Please rank the top three "influencers" on your decision to pursue a post-secondary education and career. Please rank their level of influence by placing the number "1" beside the strongest influencer, "2" beside the next strongest influencer and "3" beside the next strongest. (*Only rank the top 3*)

Influencer	1	2	3	Total %
Parents	46.4 %	23.2 %	10.7 %	80.4 %
Friends	16.1 %	28.6 %	16.1 %	60.7 %
School guidance counsellor	5.4 %	3.6 %	7.1 %	16.1 %
Teachers	5.4 %	14.3 %	21.4 %	41.1 %
Brothers and sisters	3.6 %	12.5 %	8.9 %	25.0 %
Media (i.e. movies, television, newspaper, etc.)	0.0 %	3.6 %	19.6 %	23.2 %
Other	17.9 %	5.4 %	3.6 %	26.8 %

Parents were indicated as the strongest influencer nearly three times as often as friends and eight times as often as school guidance counsellors and teachers. Brothers and sisters and the media were the least often cited as strong influencers. Friends seem to have significant influence on post-secondary students as they were ranked most often as second most frequently cited influencer (28.6%).

These data were further reviewed on the basis of gender. Slightly over one-half of male respondents (54.5%) and 60.9% of female respondents agreed that parents were a strong influence in their decision regarding a post-secondary education and career. Further analysis indicated that 37.5% of males and 16.7% of females ranked friends as the most influential. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, Post-Secondary Student Cross Tabulations and Report Tables**. A list of other influencers can be found in Appendix II of the same supplementary document.

2.0 MARINE INDUSTRY

1.1 General

Post-secondary students were given the opportunity to indicate if they were familiar with or interested in pursuing specific marine careers. Overall, students seemed to be somewhat familiar with most of the listed marine careers. Students were most aware of an engineering officer position (50.0%) and deck hand/engineering assistant (42.9%). The following table provides a summary of student responses regarding their familiarity with marine career choices indicated in the surveys.

TABLE 3

STUDENT FAMILIARITY WITH MARINE CAREERS

n=56

Marine Careers	# of Students	% of Students
Engineering officer	28	50.0 %
Deck hand/engineering assistant	24	42.9 %
Catering (cooks/stewards)	23	41.1 %
Maintenance personnel	23	41.1 %
Design personnel	21	37.5 %
Communications personnel	20	35.7 %
Deck officer	19	33.9 %
Administrative personnel	16	28.6 %
None of the above	15	26.8 %

Note: Total percentage exceeds 100% due to multiple mentions by students.

When analyzing the results by gender, the common theme is that males were more familiar with the listed positions than their female counterparts. The most significant variance by gender was in marine careers of administrative personnel (45.8% male, 29.4% female), engineering officer (75.0% male, 58.8% female) and deck hand/engineering assistant (54.2% male, 64.7% female). These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, Post-Secondary Student Cross Tabulations and Report Tables**.

Subsequent to determining the familiarity of the students with marine careers, students were asked to identify those marine careers they were interested in pursuing. Slightly over one-quarter (26.8%) of the students indicated they were interested in pursuing a deck officer career, followed by an engineering officer position (12.5%). Table 4 provides a summary of the variety of marine careers in which students expressed an interest.

TABLE 4 STUDENT INTEREST IN MARINE CAREERS n=56		
Marine Careers	**# of Students**	**% of Students**
Deck officer	15	26.8 %
Engineering officer	7	12.5 %
Deck hand/engineering assistant	6	10.7 %
Design personnel	6	10.7 %
Communications personnel	3	5.4 %
Maintenance personnel	3	5.4 %
Catering (cooks/stewards)	1	1.8 %
Administrative personnel	1	1.8 %
None of the above	15	26.8 %
Note: Total percentage exceeds 100% due to multiple mentions by students.		

Student responses regarding interest in marine careers were further reviewed on the basis of gender. Male students showed a higher interest in careers such as engineering officer (25.0% male, 5.9% female), deck officer (45.8% male, 23.5% female) and deck hand/engineering assistant (25.0% male, 0.0% female). The career that females showed a higher interest in was communications personnel (0.0% male, 17.6% female). These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, Post-Secondary Student Cross Tabulations and Report Tables.**

A significant percentage of students (26.8%) were not familiar with or interested in any of the listed marine careers. Based on gender, of those students who were neither familiar with nor interested in any of the listed marine careers, 60.0% of them were female while 40.0% were male.

An overwhelming 80.0% of post-secondary students indicated that they or someone they know has been employed or connected with the marine industry. Of those who said yes to being involved or knowing someone in, the marine industry, 80.4% indicated they found the work to be enjoyable, which translates to 37 student respondents.

Based on their knowledge of, and experience with, the marine industry, 42.9% of students were more likely to choose a career in the marine industry. One-fifth were less likely to recommend a career in the marine industry, while 35.7% were unsure.

Post-secondary students were also asked of their interest in pursuing a marine career. Forty-three percent of the total respondents indicated they were interested in pursuing a marine career. Thirty-five percent were not interested and another 21.4% were unsure of their interest in pursuing a marine career.

Post-secondary students were then asked to indicate the reasons they *were* or *were not* interested in pursuing a marine career. The primary reasons for pursuing a marine career included availability of jobs, working at sea/on water and salary expectations. Table 5 lists

the reasons why students *were* interested in a marine career and the respective number and percentage of students indicating these reasons.

TABLE 5

REASONS FOR PURSUING A MARINE CAREER

n=24

Reasons	# of Students	% of Students
Availability of jobs	23	95.8%
Working at sea/on water	20	83.3%
Salary expectations	20	83.3%
Personal interest	16	66.7%
Career reputation	14	58.3%
Cost of education	12	50.0%
Knowledge of marine careers	12	50.0%
Family expectations	7	29.2%
Support of others	7	29.2%
Relocation possibilities	6	25.0%
Training/educational requirements	4	16.7%
Career has already been decided	2	8.3%
Health or other personal reasons	1	4.2%
Other	0	0.0%

Note: Total percentage exceeds 100% due to multiple mentions by students.

Those students who *were not* interested in pursuing a marine career indicated personal interest and a career has already been decided as their reasons. Table 6 provides the list of reasons students *were not* interested in a marine career and the respective number and percentage of occurrences for each reason.

TABLE 6

REASONS FOR NOT PURSUING A MARINE CAREER

n=20

Reasons	# of Students	% of Students
Personal interest	10	50.0%
Career has already been decided	10	50.0%
Working at sea/on water	8	40.0%
Knowledge of marine careers	5	25.0%
Career reputation	2	10.0%
Family expectations	2	10.0%
Training/educational requirements	2	10.0%
Availability of jobs	2	10.0%
Relocation possibilities	1	5.0%
Health or other personal reasons	1	5.0%
Salary expectations	1	5.0%
Support of others	1	5.0 %
Cost of education	0	0.0%
Other	4	20.0%

Note: Total percentage exceeds 100% due to multiple mentions by students.

2.2 *Perceptions*

This section of the questionnaire was intended to gauge the perceptions of post-secondary students with respect to a career in the marine industry. A list of statements was provided to allow the students to rate whether they disagreed or agreed with each of the statements. Statements indicating a positive or negative perception of the marine industry were explored. The data are presented through an indication of the mean or average response to each statement. A mean value of less than 3 indicates a primarily negative perception of the statement; a mean value of greater than 3 indicates a primarily positive perception of the statement. In some cases, however, the mean is not the best indicator of responses, especially if a small number of responses are at the extreme ends of the scale (i.e. 1 or 5 in this case). Therefore, in these instances, the median and/or the mode have also been used for analytical purposes. The median indicates the middle point – one-half of the responses were below it and one-half were above it. The mode identifies the most frequently cited response(s). Unlike the mean, the mode is not affected by extreme responses. All three of these analytical measures of data are utilized to examine Tables 7 and 8.

The following seven statements were notable positive considerations regarding perceptions of careers in the marine industry (mean ratings of 3.5 or greater):

- high salaries and benefits;
- good opportunities for promotion;
- opportunities for professional certification;
- variety and excitement;
- marine careers offer full-time year-round work;
- jobs are readily available; and,
- marine careers are physically demanding.

It is worth noting that these same statements had median of 4.0 signifying that one-half of the respondents indicated agreed or strongly agreed with these statements. Additionally, for these same statements a mode of 4.0 was revealed, indicating the majority of responses were that students agreed with these statements. Table 7 illustrates the mean scores for each of these statements. Charts 3 through 9 visually depict the frequency of responses of the aforementioned statements.

TABLE 7

FACTORS WITH RESPECT TO THE MARINE INDUSTRY
(MEAN SCORES)

13. On a scale of 1 to 5, where 1 indicates "Strongly Disagree" and 5 indicates "Strongly Agree," please rate the following factors with respect to a career in the marine industry.

	1	2	3	4	5	MEAN SCORE
There are high salaries and benefits				▲		4.1
There are good opportunities for promotion				▲		4.1
There are opportunities for professional certification				▲		4.0
There is variety and excitement				▲		3.9
Marine careers offer full time year round work				▲		3.7
Jobs are readily available				▲		3.6
Marine careers are physically demanding				▲		3.5
There are good hours of work			▲			3.4
Marine careers often require working in isolated environments			▲			3.4
Marine careers require overtime work			▲			3.4
Marine careers are prestigious			▲			3.3
Marine careers require going to sea			▲			3.3
Education for marine careers is long and challenging			▲			3.1
Marine careers provide extended time at home			▲			3.0
There are flexible work hours			▲			3.0
Education and training is expensive			▲			2.9
Marine careers offer mostly seasonal employment		▲				2.6
Little education and training is required		▲				2.3

CHART 3: HIGH SALARIES AND BENEFITS

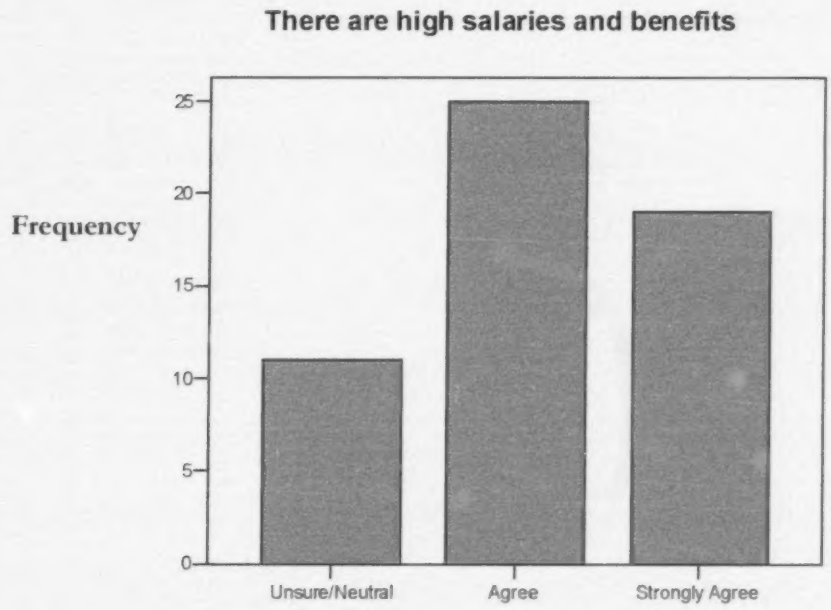


CHART 4: GOOD OPPORTUNITIES FOR PROMOTION

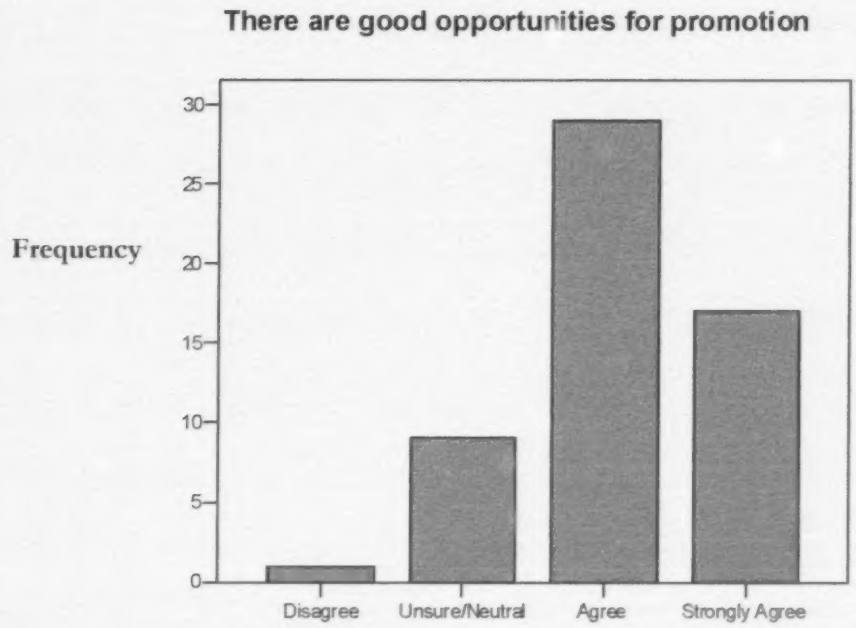


CHART 5: PROFESSIONAL CERTIFICATION

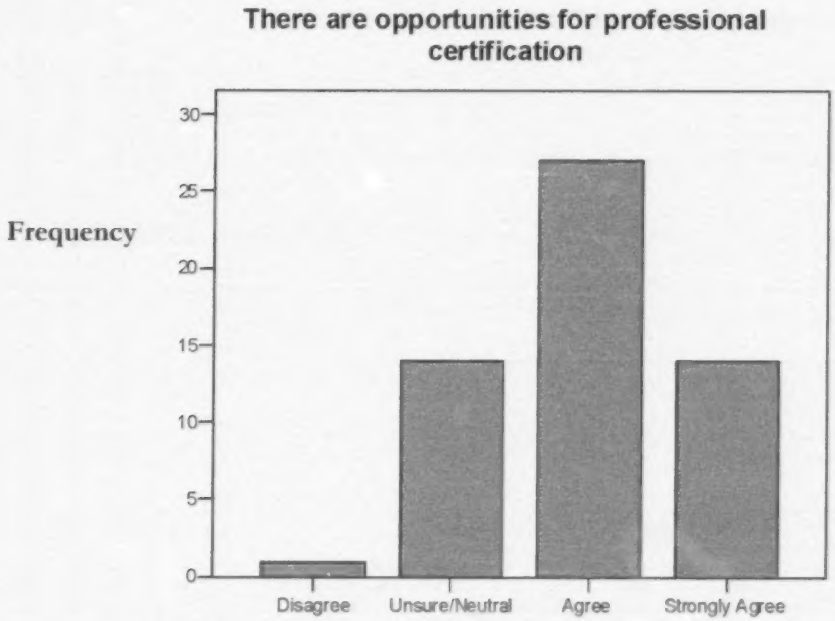


CHART 6: VARIETY AND EXCITEMENT

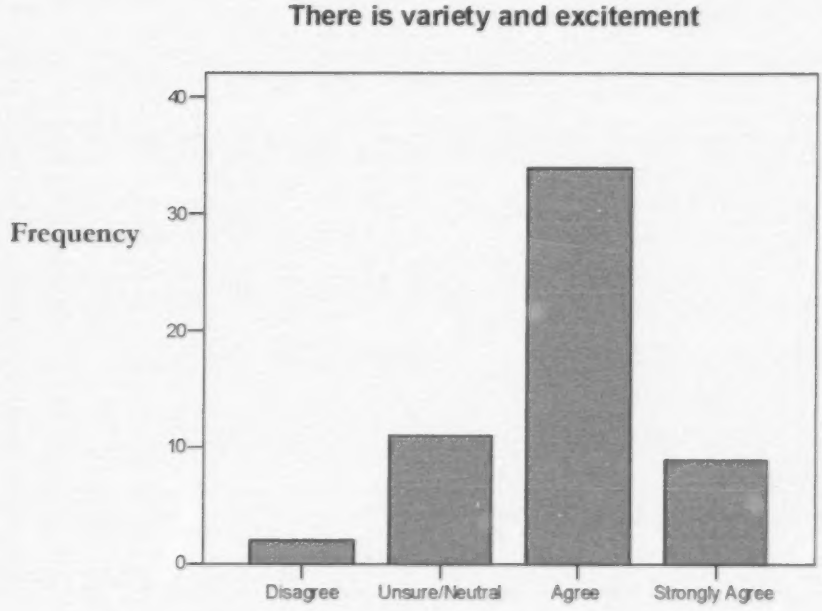


CHART 7: FULL-TIME YEAR ROUND WORK

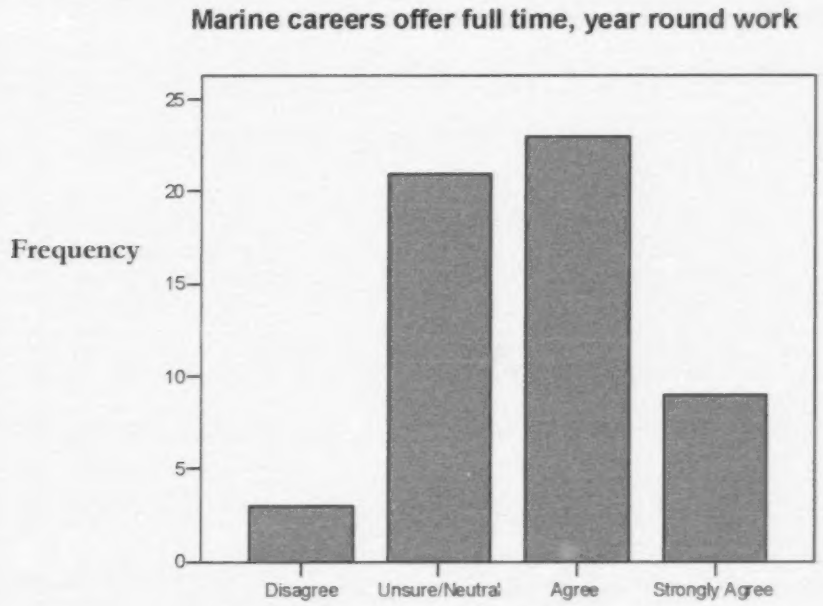


CHART 8: JOBS ARE READILY AVAILABLE

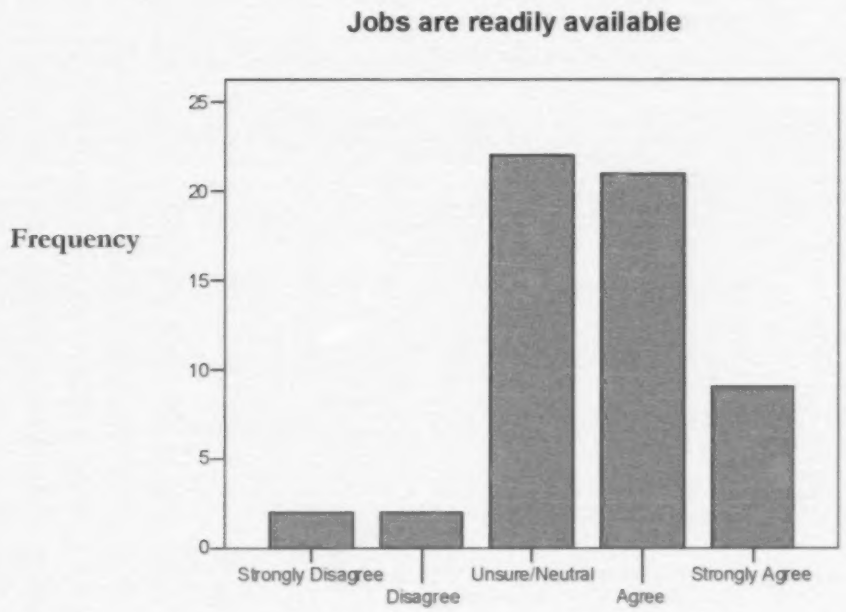
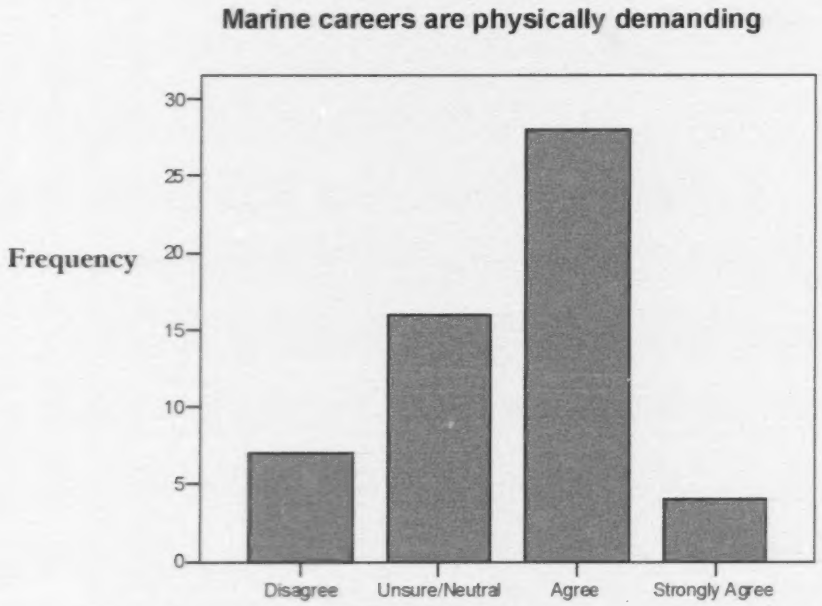
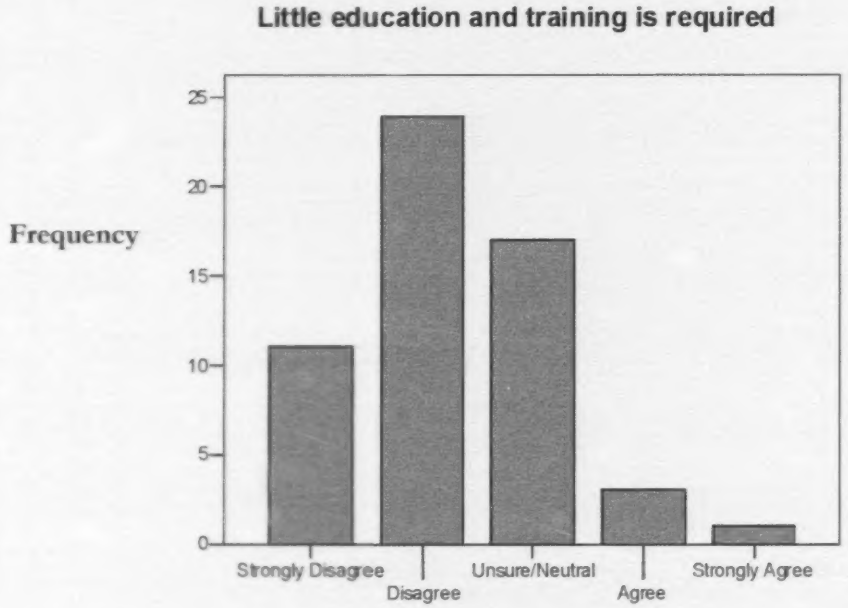


CHART 9: MARINE CAREERS ARE PHYSICALLY DEMANDING



The statement "Little education and training is required" should be noted because of its rating of 2.3/5. This indicates that most respondents disagreed with this statement and it was given less credence. Chart 10 depicts the frequency of responses for this statement.

CHART 10: LITTLE EDUCATION AND TRAINING



These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, Post-Secondary Student Cross Tabulations and Report Tables.**

2.3 Gender Issues

Statements indicating a positive or negative perception of the marine industry based on gender were also investigated. "Women can work anywhere in the marine industry"(3.8) was the only notable factor relating to the perception of gender equality in marine careers (mean rating of 3.5 or greater). However, the statements "There are equal opportunities for men and women in the marine industry"; "The marine industry is male dominated"; and, "Women can work anywhere in the marine industry" each had a median and mode of 4.0. That is, one-half of the respondents indicated they agreed or strongly agreed with these statements and the most cited response was that they agreed with these statements.

The following five statements were noteworthy as perceptions given less credence (mean ratings of 2.0 or less):

- women do not want to be at sea because they need to be close to home;
- women cannot get jobs in the marine industry;
- women in the marine industry can only work in shore-based, office & administrative jobs;
- a woman could not be the captain of a ship; and,
- women are not physically strong enough to work in marine careers.

As well, the above statements each had a median of 2.0 and a mode of 1.0 (with the exception of the statement "Women cannot get jobs in the marine industry" which had a mode of 2.0). A median of 2.0 and a mode of 1.0 signifies that one-half of the respondents indicated they disagreed or strongly disagreed with these statements and the most cited response was that they strongly disagreed. Table 8 illustrates the mean scores for each of these statements. Charts 11 through 21 visually depict the frequency of responses of the aforementioned statements.

TABLE 8

FACTORS WITH RESPECT TO THE MARINE INDUSTRY (GENDER)
(MEAN SCORES)

14. On a scale of 1 to 5, where 1 indicates "Strongly Disagree" and 5 indicates "Strongly Agree," please rate the following factors with respect to a career in the marine industry.

	1	2	3	4	5	MEAN SCORE
Women can work anywhere in the marine industry				▲		3.8
There are equal opportunities for men and women in the marine industry				▲		3.4
The marine industry is male dominated				▲		3.4
Marine industry careers are intimidating for women			▲			3.1
Women and men are treated as equals in marine careers			▲			3.0
Women face harassment working the marine industry			▲			2.8
Ships are not built to properly accommodate women		▲				2.4
Having men and women on a vessel as a crew can cause problems		▲				2.3
Marine industry careers are unsuited for women		▲				2.1
Women do not want to be at sea because they need to be close to home		▲				2.0
Women cannot get jobs in the marine industry		▲				1.9
Women in marine industry can only work in shore-based, office & administrative jobs	▲					1.8
A woman could not be the captain of a ship		▲				1.7
Women are not physically strong enough to work in marine careers		▲				1.7

CHART 11: WOMEN CAN WORK ANYWHERE

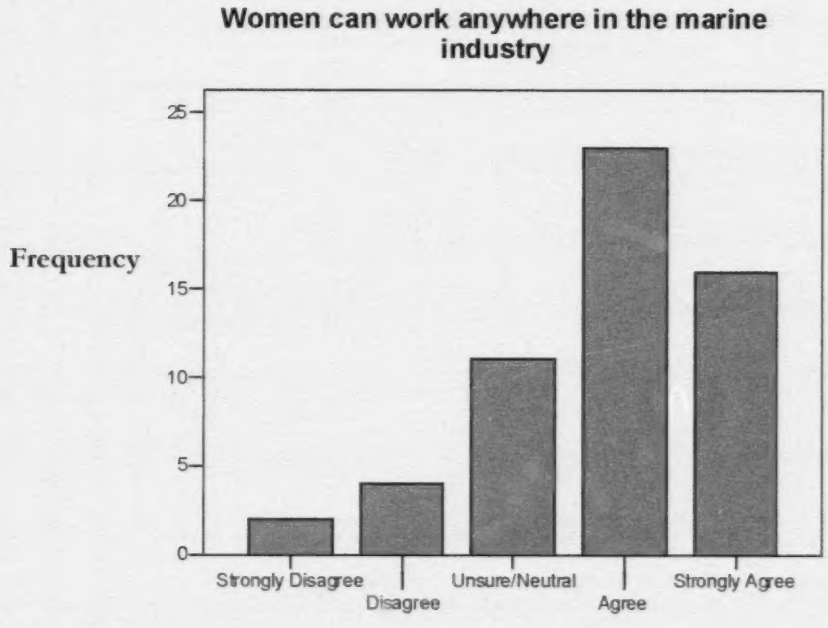


CHART 12: EQUAL OPPORTUNITIES

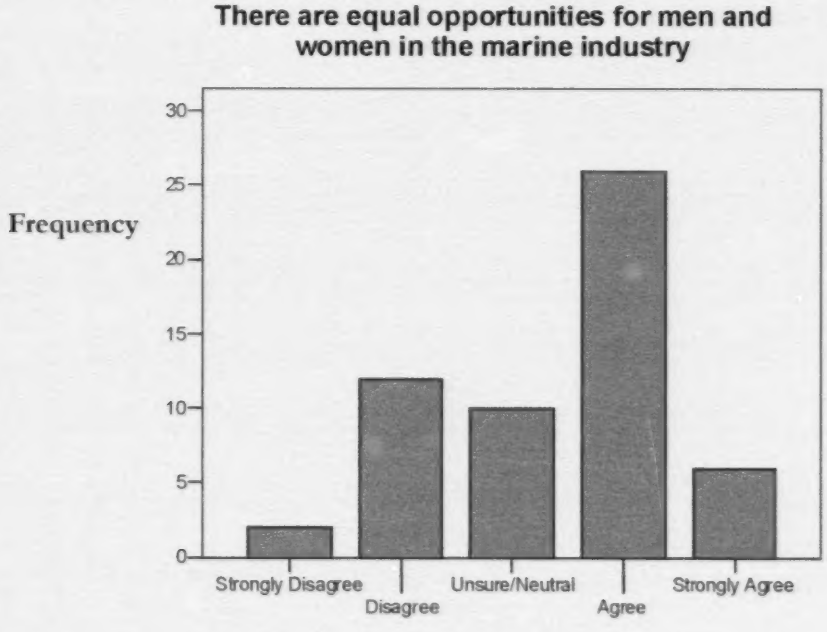


CHART 13: MARINE INDUSTRY MALE DOMINATED

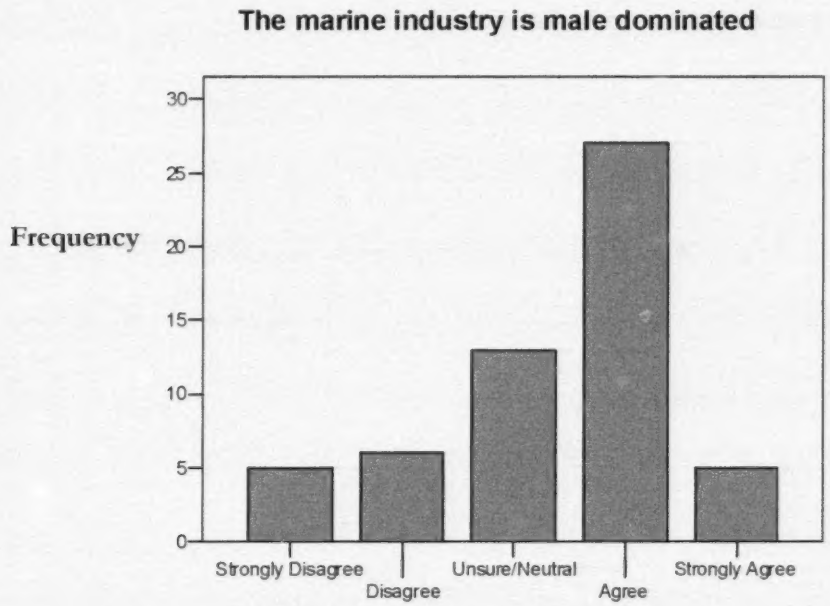


CHART 14: SHIPS ARE NOT BUILT TO ACCOMMODATE WOMEN

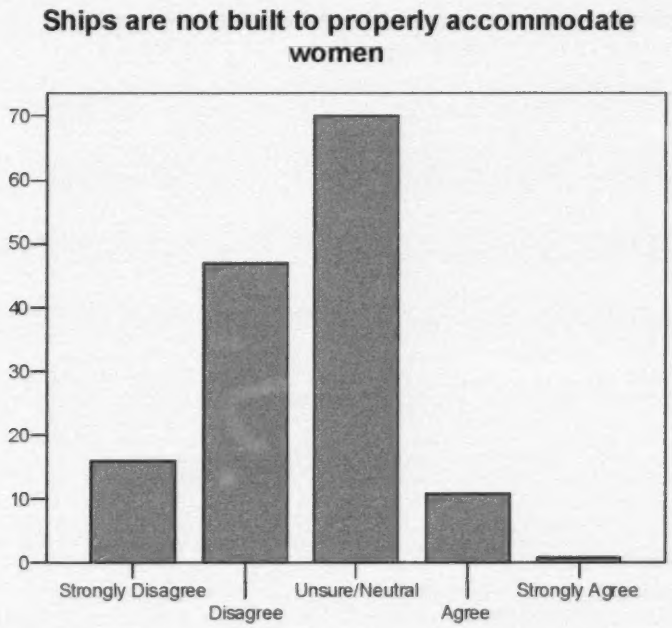


CHART 15: MEN AND WOMEN ON VESSEL AS CREW CAUSE PROBLEMS

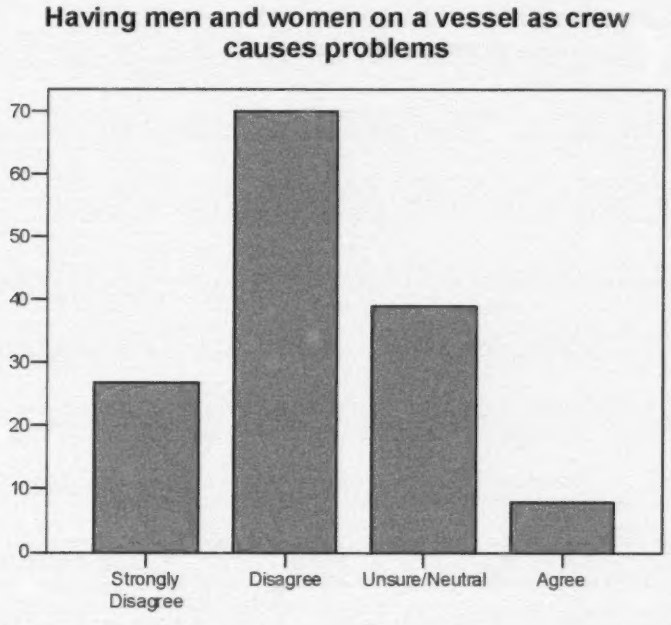


CHART 16: MARINE INDUSTRY CAREERS UNSUITED FOR WOMEN

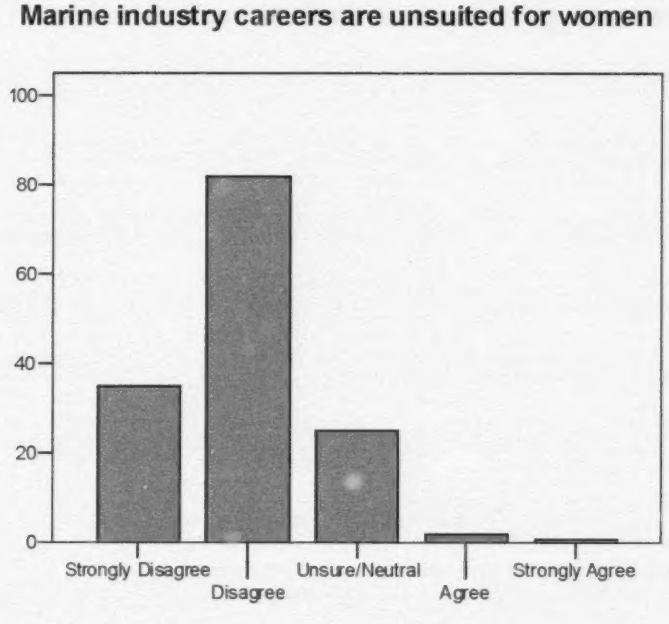


CHART 17: WOMEN DO NOT WANT TO BE AT SEA, NEED TO BE CLOSE TO HOME

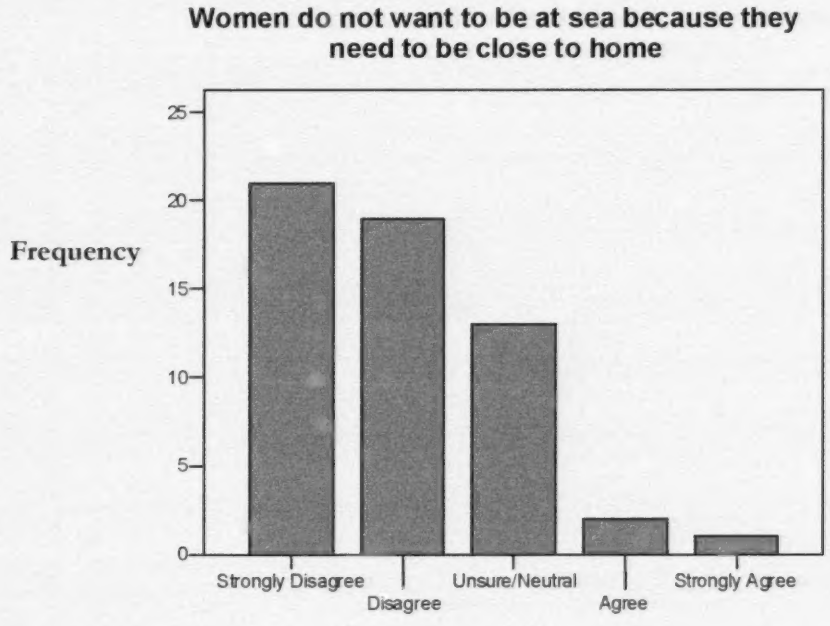


CHART 18: CANNOT GET JOBS IN MARINE INDUSTRY

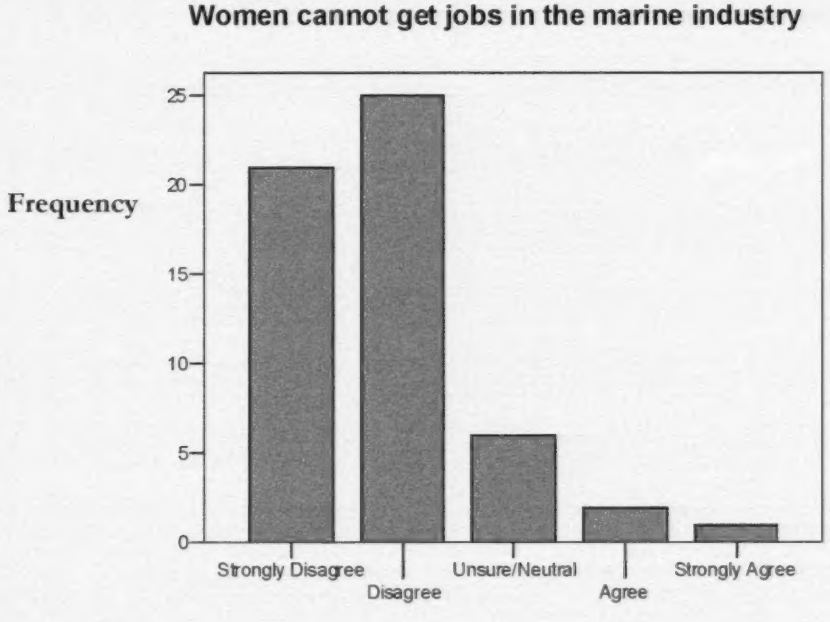


CHART 19: ONLY WORK IN SHORE-BASED, OFFICE & ADMINISTRATIVE

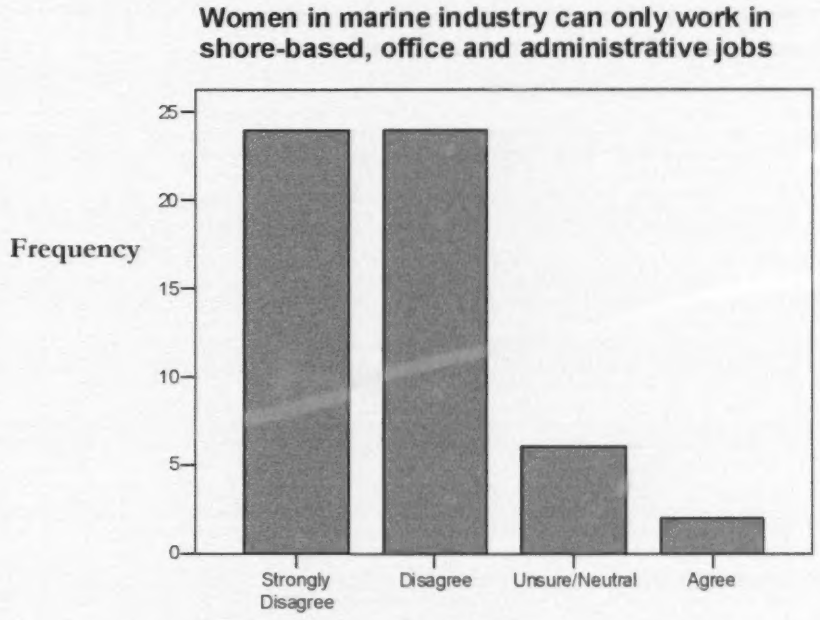


CHART 20: CAPTAIN OF A SHIP

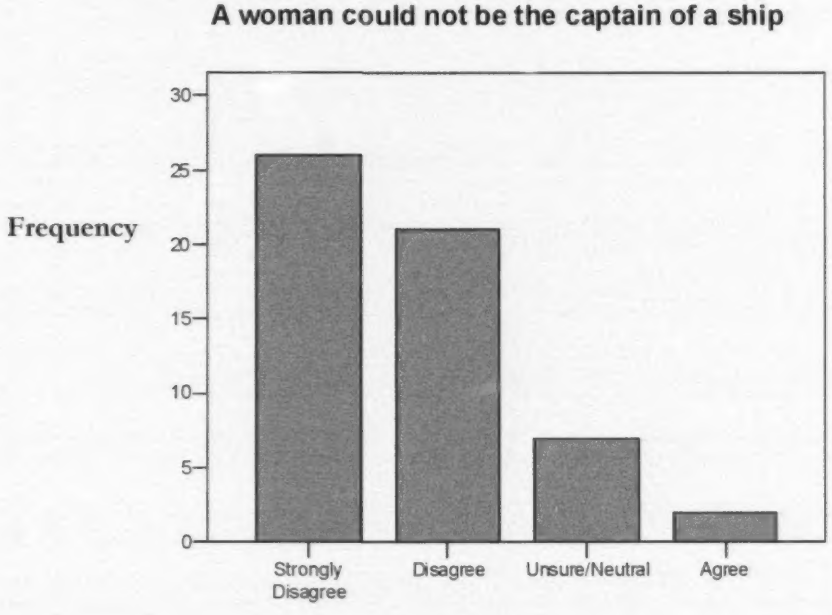
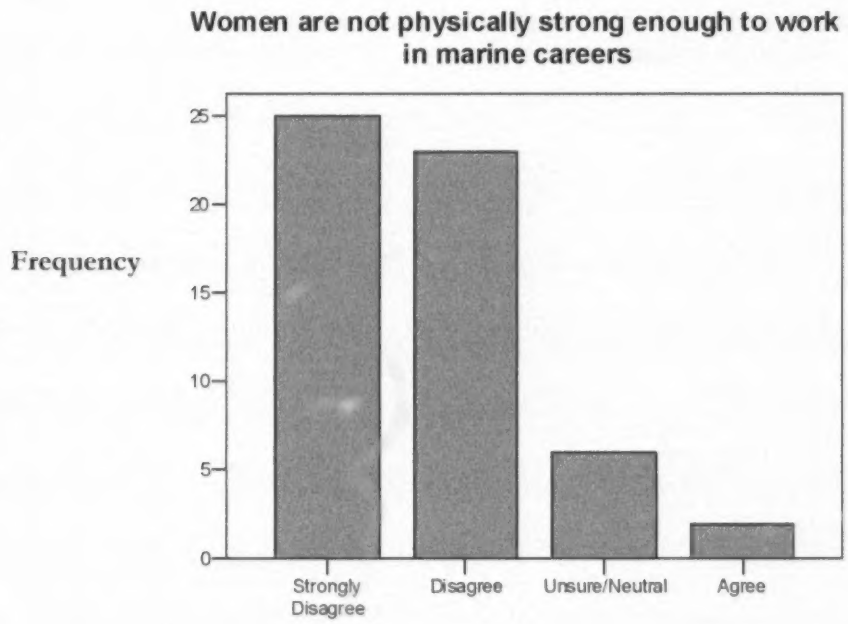


CHART 21: NOT PHYSICALLY STRONG ENOUGH



2.4 Marine Careers

Post-secondary students were asked to rate how much they knew about shore-based versus at-sea/on water marine careers. A five-point scale, with 1 indicating "Very Little" and 5 indicating "Very Much," was used. As indicated in Table 9, about 57.1% of students who responded to this question rated their knowledge of shore based careers at 2 or lower, compared to 19.6% of students who rated their knowledge of shore based careers at 4 or higher.

TABLE 9

KNOWLEDGE OF SHORE BASED MARINE CAREERS

n= 56

Rating	# of Students	% of Students
1 out of 5	19	33.9 %
2 out of 5	13	23.2 %
3 out of 5	13	23.2 %
4 out of 5	6	10.7 %
5 out of 5	5	8.9 %
Total	56	100.0 %

On the basis of gender, of the total female respondents (n=26), 46.2% knew very little and only 3.8% knew very much about shore-based marine careers. On the other hand, of the total male respondents (n=30), a smaller percentage (23.3%) knew very little about shore-

based marine careers and a higher percentage (13.3%) knew very much about shore-based marine careers. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, Post-Secondary Student Cross Tabulations and Report Tables.**

With regard to respondents' knowledge of at-sea/on water careers, nearly one-third (31.1%) of students rated their knowledge at 2 or lower, meaning they indicated very little or little knowledge of at-sea/on water careers. Alternatively, 21.5% of students rated their knowledge at 4 or higher, signifying they knew very much or much about at-sea/on water careers. Table 10 provides a breakdown of the students' responses.

TABLE 10

KNOWLEDGE OF AT-SEA/ON WATER MARINE CAREERS

n=56

Rating	# of Students	% of Students
1 out of 5	15	26.8 %
2 out of 5	3	5.4 %
3 out of 5	12	21.4%
4 out of 5	13	23.2%
5 out of 5	13	23.2%
Total	56	100.0%

On the basis of gender, of the total female respondents (n=26), 34.6% knew very little and 19.2% knew very much about at-sea/on water marine careers. On the other hand, of the total male respondents (n=30), 20.0% knew very little about at-sea/on water marine careers compared to 26.7% who knew very much about at-sea/on water marine careers. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, Post-Secondary Student Cross Tabulations and Report Tables**

Overall, female and male respondents did seem to be more knowledgeable about shore-based marine careers than at-sea/on water marine careers.

Seventy-five percent of post-secondary students were willing to work away from home for extended periods of time. It is interesting to note that a higher percentage of male respondents (93.3%) than female respondents (53.8%) indicated they would be willing to work away from home for an extended period of time.

2.5 Educational and Training Requirements

In this section, students were asked about their opinions on educational and training requirements needed for working in the marine industry. Students indicated that teamwork (96.4%), communication (89.3%), and navigational skills (89.3%) were the most needed skills for a marine career. The following table provides a summary of student rankings of a list of skills provided in the survey.

TABLE 11 SKILLS NEEDED FOR A MARINE CAREER n=56		
Skills	**# of Students**	**% of Students**
Teamwork	54	96.4 %
Communication	50	89.3 %
Navigational skills	50	89.3 %
Computer automation	42	75.0 %
Interpersonal skills	36	64.3 %
Leadership	46	82.1 %
Planning/organizing	43	76.8 %
Mechanical training	44	78.6 %
Management skills	40	71.4 %
Blueprint reading	36	64.3 %
Other	3	5.4 %
Note: Total percentage exceeds 100% due to multiple mentions by students.		

Upon analyzing the data by gender, the most significant variance between male and female students in selecting a skill needed for a marine career was in management skills (83.3% male, 57.7% females). The gender distribution was about the same in the remaining listed skills with the exception of computer automation (70.0% males, 80.8% females) and mechanical training (83.3% males, 73.1% females) having some variation.

In terms of perceptions regarding the best place to receive skills required for a marine career, respondents provided the data presented in Table 12. Not surprisingly, almost all (96.4%) of post-secondary students indicated the Marine Institute as one of the places to obtain an education for marine careers.

TABLE 12 WHERE TO OBTAIN SKILLS FOR A MARINE CAREER n=56		
Location	**# of Students**	**% of Students**
Marine Institute	54	96.4 %
On-the-job	35	62.5 %
Memorial University	26	46.4 %
College of the North Atlantic	17	30.4 %
Other universities	17	30.4 %
Other public colleges	11	19.6 %
Private colleges	8	14.3 %
Don't know	3	5.4 %
Other	1	1.8 %
Note: Total percentage exceeds 100% due to multiple mentions by students.		

These data were reviewed further on the basis of gender. The greatest variations between male and female students on where they could receive skills for the marine industry were with on-the-job training (53.3% male, 73.1% female), other universities (23.3% male, 38.5% female) and other public colleges (23.3% male, 15.4% female). It is interesting to note that for the remaining options, the gender variance was within five percentage points between

male and female respondents. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, Post-Secondary Student Cross Tabulations and Report Tables.**

Slightly over 80.0% of post-secondary students felt that it is *not* necessary to leave the province in order to obtain training for a marine career. Furthermore, a high percentage (47.3%) of post-secondary students believed that the minimum level of education required to enter a marine career is graduation from high school. The following table provides an overview of the perceived minimum levels of education for a marine career.

TABLE 13

MINIMUM LEVEL OF EDUCATION REQUIRED

n=55

Education Level	# of Students	% of Students
High school graduate	26	47.3 %
Public college	16	29.1 %
Private college certificate/ diploma	3	5.5 %
Some high school	4	7.3 %
Bachelor's degree	1	1.8 %
Completed Grade 9 or less	2	1.7 %
Masters or higher	2	3.6 %
Other	1	1.8 %
Total	55	100.0%

Supplementary gender analysis indicated that both male and female respondents believed that high school graduation (44.8% male, 50.0% female) is the minimum level of education needed to enter the marine industry. With respect to public colleges, 27.6% of males and 30.8% of females felt this was the minimum level of education required for entering the marine industry. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, Post-Secondary Student Cross Tabulations and Report Tables.**

2.6 Financial Incentives/ Inducements

Of the students who responded to the question on how salaries in the marine industry compare to the average salary of Newfoundlanders and Labradorians employed in other sectors, 63.6% believed the salaries are higher in the marine industry while only 3.6% believed they were lower. Table 14 provides an overview of post-secondary students' perceptions of salary comparisons between the marine industry and other sectors in the province.

TABLE 14 SALARY COMPARISON n= 55		
Salary Comparison	**# of Students**	**% of Students**
Salaries are higher	35	63.6 %
Do not know/unsure	17	31.0 %
Salaries are lower	2	3.6 %
Salaries are the same	1	1.8 %
Total	55	100.0 %

According to gender, 75.9% of male students compared to 50.0% of female students believed that salaries are higher for those employed in the marine industry compared to the average salary of Newfoundlanders and Labradorians employed in other sectors. There were a higher percentage (42.3%) of female students than male students (20.7%) who were unsure or didn't know how the salary compensation differed. There was minimal variance between male and female students with respect to whether salaries are lower or salaries are the same for those employed in the marine industry compared to the average salary of Newfoundlanders and Labradorians employed in other sectors. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, Post-Secondary Student Cross Tabulations and Report Tables.**

2.7 Knowledge of Marine Institute

Post-secondary students who responded to the question of availability of programs at the Marine Institute, 76.8% indicated they were aware of the Diploma of Technology. Over one-half of students believed that short-term certificates were available through the Marine Institute and one-half of students thought a Bachelor's degree was available at the Marine Institute. Table 15 provides a list of the types of programs available at the Marine Institute and the percentage of students who indicated each program.

TABLE 15 TYPES OF PROGRAMS AVAILABLE AT THE MARINE INSTITUTE n= 56		
Programs	**# of Students**	**% of Students**
Diploma of technology	43	76.8 %
Short-term certificate	31	55.4 %
Bachelor's degree	28	50.0 %
Post-graduate diplomas	26	46.4 %
Master's degree	15	26.8 %
Do not know	12	21.4 %
Note: Total percentage exceeds 100% due to multiple mentions by students.		

The awareness of programs available at the Marine Institute was examined on the basis of gender. There was some variance between male and female students on awareness of the Bachelor's degree (53.3% male, 46.2% female) and the Diploma of Technology (80.0% male, 73.1% female) at the Marine Institute. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, Post-Secondary Student Cross Tabulations and Report Tables.**

Almost 75% of post-secondary students were aware that credits from other institutions, within specified guidelines, could be transferred to the Marine Institute.

Post-secondary students were asked to rank their perception from 1 to 5 on the reputations of a list of institutions. Memorial University of Newfoundland was ranked first by 46.4% of the students and the Marine Institute was the next highest ranked institution, by 39.3% of students. Similar results were revealed for the second most prestigious institution with Memorial University ranked by 39.3% of students and the Marine Institute ranked by 33.9% of students. Table 16 provides a breakdown of the results for the first and second rankings.

TABLE 16

PERCEPTION OF REPUTATION OF INSTITUTIONS

24. Please rank your perception of the reputations of the following institutions, 1 being the institution with the best reputation, 2 being the next, 3 being the third, 4 being the forth, and 5 being the fifth.

Institution	1	2
Memorial University	46.4 %	39.3 %
Marine Institute	39.3 %	33.9 %
College of the North Atlantic	5.4 %	17.9 %
Private college	1.8 %	1.8 %
Other public colleges	1.8 %	1.8 %

On the basis of gender, of those students who ranked Memorial University as the top institution in terms of reputation, 46.4% were female and 52.0% were male. Of those students who ranked the Marine Institute as the second most reputable institution, 39.3% were male and 44.0% were female. These data can be reviewed in the supplementary document: **Appendices of the Public Perception Survey, Post-Secondary Student Cross Tabulations and Report Tables.**

3.0 SUMMARY ISSUES AND IMPLICATIONS

The following review of interview findings focuses on potential issues to be addressed by the Marine Careers Secretariat. The issues are organized and presented according to the main sections of the questionnaire.

Background Information

A total of 56 post-secondary students responded to the survey. Among those post-secondary students who were decided as to a career choice, a variety of areas were listed such as nautical science, education, nursing, kinesiology and food science. Post-secondary students consider their parents as the most influential people when deciding to pursue a post-secondary education and/or career,

Wages was indicated as the most significant factor in choosing a career, followed by job stability, benefits (health care, pension, etc), opportunity to travel and variety and excitement.

Marine Industry

Overall, post-secondary students seemed to be somewhat familiar with most of the listed marine careers in the survey. Students were most aware of an engineering officer position and deck hand/engineering assistant. As far as the students interest in pursuing marine careers, slightly over one-quarter of the students were interested in pursuing a deck officer career, followed by an engineering officer position. The primary reasons for pursuing a marine career included availability of jobs, working at sea/on water and salary expectations. Those students who *were not* interested in pursuing a marine career indicated personal interest and a career has already been decided as their reasons.

An overwhelming percentage of post-secondary students indicated that they or someone they know has been employed or connected with the marine industry.

Perceptions

The following seven statements were notable positive considerations regarding perceptions of careers in the marine industry (mean ratings of 3.5 or greater):

- high salaries and benefits;
- good opportunities for promotion;
- opportunities for professional certification;
- variety and excitement;
- marine careers offer full-time year-round work;
- jobs are readily available; and,
- marine careers are physically demanding.

Gender Issues

There was a perception among post-secondary students that women are capable of performing the same tasks and activities as men in marine careers. The evaluation of gender factors with respect to the marine industry indicates disagreement with the statements suggesting that women do not have the same opportunities and capabilities as men.

Marine Careers

Knowledge of both shore-based careers and at-sea/on water marine careers was somewhat low by post-secondary students who responded to the question of how much they knew about these marine careers.

Educational and Training Requirements

Post-secondary students believed that the minimum level of education required to enter a marine career is graduation from high school. In terms of perceptions regarding the best place to receive skills required for a marine career, almost all post-secondary students indicated the Marine Institute as one of the places to obtain an education for marine careers. Teamwork, communication and navigational skills were the most needed skills for a marine career.

A high percentage of post-secondary students felt that it is *not* necessary to leave the province in order to obtain training for a marine career.

Financial Incentives/ Inducements

Almost 65% of post-secondary students felt that salaries are higher in the marine industry compared to the average salary of Newfoundlanders and Labradorians employed in other sectors.

Knowledge of Marine Institute

Post-secondary students were aware that a diploma of technology and short-term certificates were available at the Marine Institute. A high percentage of post-secondary students were aware that credits from other institutions, within specified guidelines, could be transferred to the Marine Institute.

Overall, the perception of the Marine Institute was positive as it was ranked second as the most reputable institution after Memorial University.